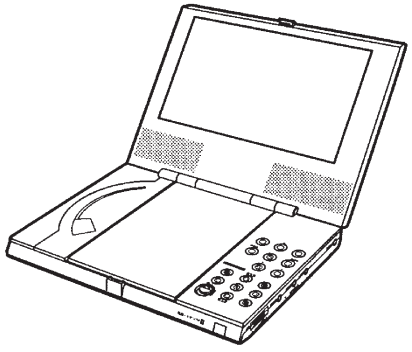
SHARP SERVICE MANUAL

SY9S7DV-L70S/



PORTABLE DVD VIDEO PLAYER

MODELS DV-L70S DV-L70BL DV-L70W

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

Page
1. IMPORTANT SAFEGUARDS AND PRECAUTIONS 2
2. FEATURES 4
3. SPECIFICATIONS 4
4. PART NAMES 6
5. DISASSEMBLY METHOD 7
6. ADJUSTMENT METHOD 8
7. TEST MODE 13
8. TROUBLESHOOTING 16
9. IC FUNCTION LIST 20
10. SEMICONDUCTOR LEAD IDENTIFICATION 52
11. WIRING DIAGRAM 53
12. BLOCK DIAGRAMS 54
13. SCHEMATIC DIAGRAMS 62
14. PRINTED WIRING BOARD ASSEMBLIES 74
15. REPLACEMENT PARTS LIST 79
16. PACKING OF THE SET 92

SHARP CORPORATION

1. IMPORTANT SAFEGUARDS AND PRECAUTIONS

CAUTION

BEFORE OPERATING YOUR NEW DVD PLAYER, PLEASE CAREFULLY READ THIS OPERATION MANUAL AND THEN SAVE IT FOR FUTURE REFERENCE.

Note:
This unit can be used only where the power supply is AC 110V-240V, 50/60Hz. It cannot be used elsewhere.

CAUTION:

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

AS THE LASER BEAM USED IN THIS DVD PLAYER IS HARMFUL TO THE EYES, DO NOT ATTEMPT TO DISASSEMBLE THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

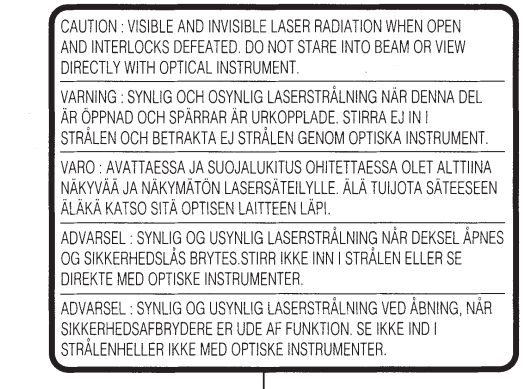
WARNING:

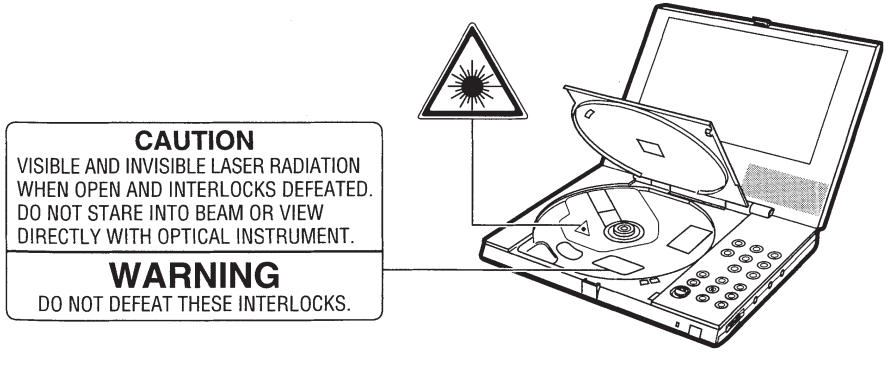
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

Laser Diode Properties	
for DVD disc Play	for CD, Video CD disc Play
Material: AlGaInP	Material: AlGaAs
Wave length: 650 nm	Wave length: 780 nm
Emission duration: Continuous	Emission duration: Continuous
Laser output: Max. 0.7 mW	Laser output: Max. 0.7 mW

- This DVD player is classified as a CLASS 1 LASER product.
- "CLASS 1 LASER PRODUCT" is printed at the bottom of the player.
- Laser caution label is located at the bottom of the player.
- This product contains a low power laser device.
  To ensure continued safety do not remove any cover or attempt to gain access to the inside of the product. Refer all servicing to qualified personnel.


CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENT.
VARNING : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN GENOM OPTISKA INSTRUMENT.
VARO : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.
ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLNING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES.STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.
ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. SE IKKE IND I STRÅLENHELLER IKKE MED OPTISKE INSTRUMENTER.
CLASS 1
LASER PRODUCT


CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENT.
WARNING
DO NOT DEFEAT THESE INTERLOCKS.

⚠CAUTION
BEFORE BATTERY DESTROY

■ NICKEL-CADMIUM BATTERY

The following program is available in the United States. Please consult local environmental authorities concerning the availability of this or other programs in your area.

The RBRC™ Seal

SHARP participates in the RBRC™* Nickel-Cadmium Battery Recycling Program in the United States. The RBRC™ Seal on our battery pack contained in our product indicates that SHARP is voluntarily participating in an industry program to collect and recycle these batteries. The RBRC™ program provides you with a convenient alternative to placing spent Nickel-Cadmium battery packs into the trash or municipal waste stream, which is illegal in some areas. At the end of their useful life, the Nickel-Cadmium battery can be dropped off at the nearest collection center for recycling. For information on the nearest collection center, call 1-800-8-BATTERY or your local recycling center. If you are located outside the United States, contact your local authorities for information concerning proper disposal and/or recycling of this battery. SHARP's involvement in this program is part of our commitent to protecting our environment and conserving natural resources.

[Footnote] *RBRC™ is a trademark of the Rechargeable Battery Recycling Corporation.

■ NICKEL-METAL HYDRIDE BATTERY
■ LITHIUM or LITHIUM-ION BATTERY
■ SEALED LEAD BATTERY

Battery disposal

Contains the above Rechargeable Battery. must be recycled or disposed of properly.

Remove the Battery from the products and contact Federal or State Environmental Agencies for information on recycling and disposal options.

2. FEATURES

7" LCD Screen and Stereo Speakers

- A big 7" LCD screen and built-in stereo speakers provide exciting DVD viewing, even without connecting to a TV.
- Dolby Virtual provides high-quality surround sound.

2-WAY Power Supply (Battery pack is sold separately.)

- A 2-way power supply allows operation using the supplied AC adapter for indoor play, or the battery pack sold separately for outdoor play.

Compact, Lightweight Design

- About the size of a movie DVD case, your DVD player is designed to go along just about anywhere.

High-Resolution Images, High-Quality Sound

- A high-resolution 336,960-pixel LCD screen produces images of outstanding quality.
- Digital gamma correction and digital super picture provide more realistic image detail.
- Dolby Virtual ensures richer sound from two built-in speakers.

AV input/output, optical digital output jack equipped as standard

- An optical digital output jack (which doubles as the audio input/output jack) can be used to output a stream of *1Dolby Digital 5.1 channel audio, *2DTS digital audio and Audio MPEG. Connecting a Dolby Digital/DTS/Audio MPEG digital surround processor or amplifier to this jack creates an environment of amazingly powerful surround sound.
- The AV input/output jack can be used to connect a video deck or camcorder to your DVD player. Or you can use these jacks to connect to a TV for big-screen viewing. (Output only is supported for S-video. An S-video signal cannot be input to your DVD player.)

*1 Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.
Confidential Unpulished Works. C 1992-1997 Dolby Laboratories, Inc. All rights reserved.

*2 "DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc.

3. SPECIFICATIONS

Product:	Portable DVD Video Player
Model:	DV-L70S/BL/W
Signal System:	NTSC/PAL
Supported Disc Types:	DVD (Region Number 2, ALL), Video CD, Audio CD (DV-L70S/BL) DVD (Southeast Asia: Region Number 3, ALL/Australia and New Zealand: Region Number 4, ALL), Video CD Audio CD (DV-L70W)
Video Input/Output:	Input/Output Jack: Mini jack × 1 (accepts supplied S-video/video cord) Input/Output Levels: 1Vp-p (75Ω)
S-Video Output:	Y Output Level: 1Vp-p (75Ω) C Output Level: 0.286Vp-p (75Ω) Output Jack: Mini jack (shared with Video In/Out) × 1 (accepts supplied S-video/video cord)
Audio Input/Output:	Input /Output Jack: Mini jack × 1 (accepts supplied audio cord) Input/Output Levels: 2Vrms (1kHz, 0dB)
Digital Audio Interface:	Optical digital output: Mini jack (shared with audio In/Out)
Audio Output:	0.8W + 0.8W
Headphones Output:	Output Jack: Mini jack (stereo)
Display:	Screen Size: 7 inches (87.8 ($3^{15}/_{32}$") (H) × 155.5 ($6^{1}/_{8}$") (W) mm) Type: Transmissive TN liquid crystal panel Drive: TFT (thin transistor) active matrix Pixels: 336,960 (234 (H) × 480 (W) × 3), Effective Pixel Rate:99.99% minimum
Speakers:	Two 28mm round speakers
Light Source:	Internal (fluorescent)
Video Signal:	Horizontal Resolution: 480 lines (DVD) S/N Ratio: 60 dB minimum

Audio Signals:	Frequency Characteristics: Linear PCM DVD: 4Hz to 22kHz (48kHz sampling)/ 4Hz to 44kHz (96kHz sampling) CD: 4Hz to 20kHz (EIAJ) (Audio MPEG Version 2.0) S/N Ratio: CD: 95 dB 1kHz (EIAJ) Dynamic Range: Linear PCM DVD: 94dB (EIAJ) CD: 94dB (EIAJ) Total Harmonic Distortion Ratio: 0.006% maximum (EIAJ)
Power Requirements:	AC Adapter: 9V DC
Power Consumption:	Main Power On: 11W average (15.5W maximum)
(AC Adapter)	Standby: 0.5W (Power/standby lamp lit red) Main Power Off:0W
Dimensions:	188 (W) × 141 (D) × 25.4 (H) mm ($7^{13}/_{32}$" × $5^{9}/_{16}$" × 1") (except for projections)
Weight:	620g (1.37 lbs)
Operating Temperature:	5°C to 35°C (41°F to 95°F)
Operating Humidity:	80% RH maximum
Storage Temperature:	-20°C to 40°C (-4°F to 104°F)

AC Adapter Specifications

Power Requirements:	110 to 240V AC, 50/60Hz
Rated Input Capacity:	DVD Operation: 30VA Charging (110V): 30VA
Rated Output:	DVD Operation: 9V DC Charging: 9V DC
Dimensions:	58 (W) × 104 (D) × 275 (H) mm ($2^{19}/_{64}$" × $4^{7}/_{64}$" × $10^{53}/_{64}$")
Weight:	170g (0.38 lbs)

Battery Pack Specifications

Type:	Lithium-ion type
DC output:	7.4V
Capacity:	4200mAh
Operating temperature:	0°C to +40°C (32°F to 104°F) (charging: 10°C to 30°C (50°F to 86°F))
Max. Dimensions:	184 (W) × 134.5 (D) × 14.5 (H) mm ($7^{1}/_{4}$" × $5^{19}/_{64}$" × $^{37}/_{64}$") without protruding parts
Weight:	430g (0.95 lbs)

Specifications are subject to change without notice.
Weight and dimensions are approximate.

Digital Output (linear PCM)

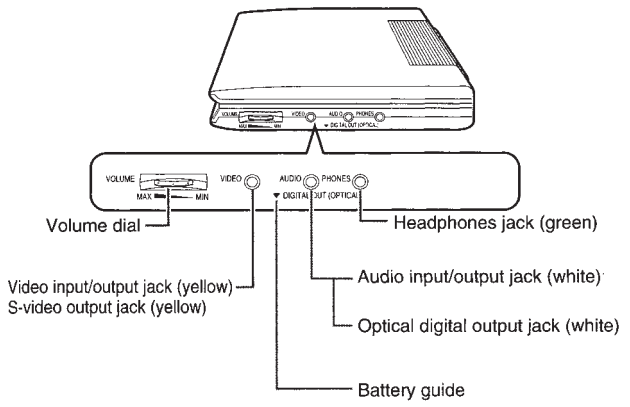
· The digital output format used in this DVD video player is linear PCM audio sampling at 44.1 kHz or 48 kHz.
Linear PCM sound for DVD video discs sampled at 96 kHz cannot be output digitally.
Check the disc jacket for information on the audio sampling used.

3-1. ACCESSORIES

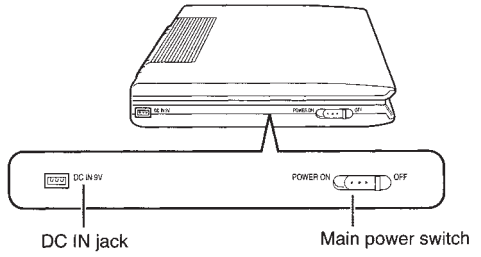
Accessories: Audio Cord x 1, S-Video/Video cord x 1, AC Power Cord x 1, UM/SUM-3 battery x 2, Remote Control Unit x 1, Earphones x 1, AC Adapter x 1, Operation Manual x 1

4. PART NAMES

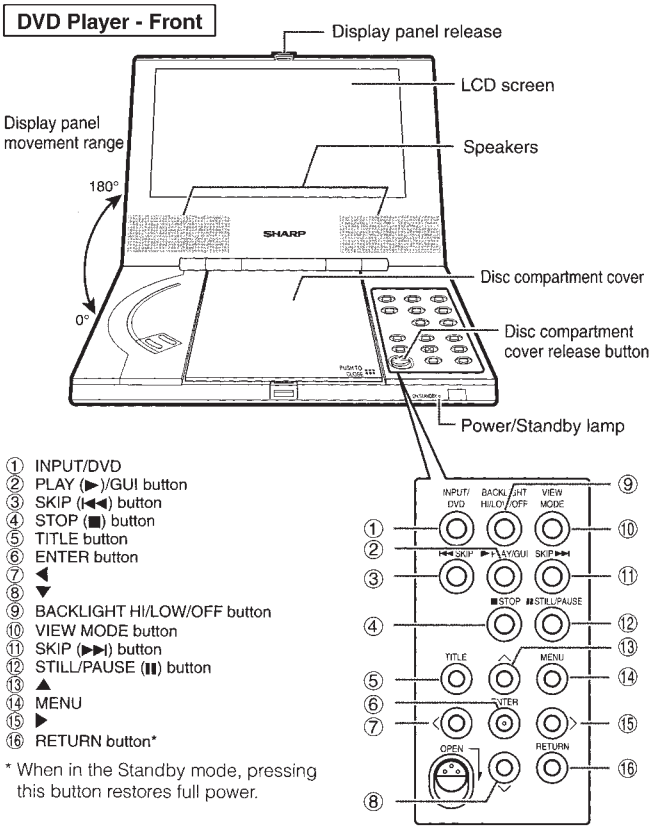
DVD Player - Right side



DVD Player - Left side



DVD Player - Front



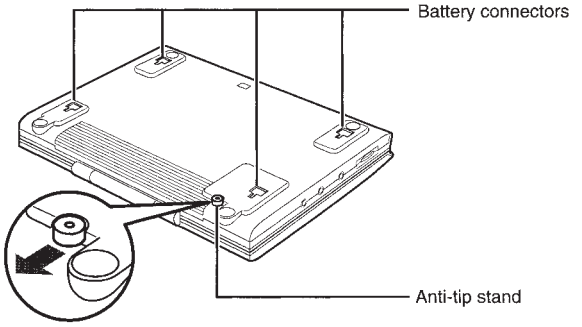
① INPUT/DVD
② PLAY (▶)/GUI button
③ SKIP (⏮) button
④ STOP (■) button
⑤ TITLE button
⑥ ENTER button
⑦ ◀
⑧ ▼
⑨ BACKLIGHT HI/LOW/OFF button
⑩ VIEW MODE button
⑪ SKIP (⏭) button
⑫ STILL/PAUSE (⏸) button
⑬ ▲
⑭ MENU
⑮ ▶
⑯ RETURN button*

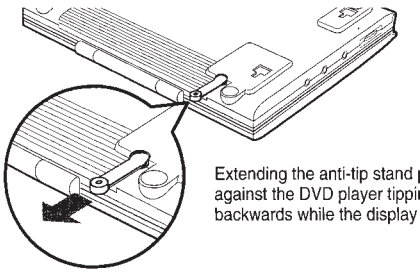
* When in the Standby mode, pressing this button restores full power.

Important!

- The range of movement for the display panel is 0° to 180°. Never try to force the display panel open past 180°. Doing so can seriously damage the display panel and DVD video player.

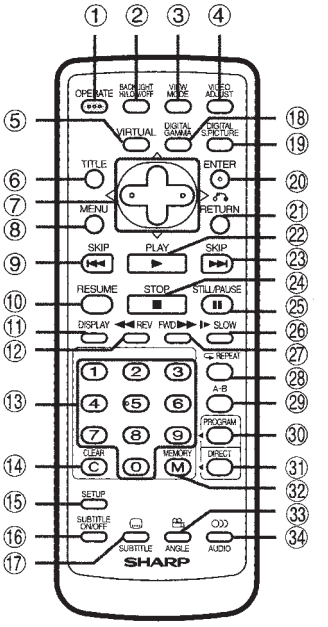
DVD Player - Bottom





Extending the anti-tip stand protects against the DVD player tipping backwards while the display panel is open.

Remote Control Unit



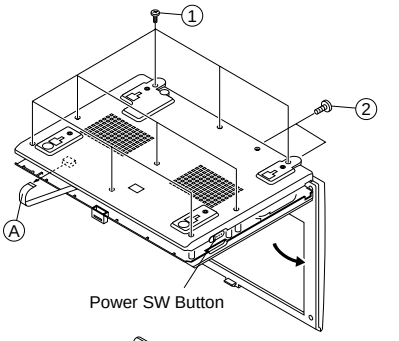
① OPERATE button
② BACKLIGHT HI/LOW/OFF button
③ VIEW MODE button
④ VIDEO ADJUST button
⑤ VIRTUAL button
⑥ TITLE button
⑦ Cursor buttons (▲▼◀▶)
⑧ MENU button
⑨ SKIP (⏮) button
⑩ RESUME button
⑪ DISPLAY button
⑫ REV (◀◀) button
⑬ Number buttons
⑭ C (CLEAR) button
⑮ SETUP button
⑯ SUBTITLE ON/OFF button
⑰ SUBTITLE button
⑱ DIGITAL GAMMA button
⑲ DIGITAL S.PICTURE button
⑳ ENTER button
㉑ RETURN button
㉒ PLAY (▶) button
㉓ SKIP (⏭) button
㉔ STOP (■) button
㉕ STILL/PAUSE (⏸) button
㉖ SLOW (⏯) button
㉗ FWD (▶▶) button
㉘ REPEAT button
㉙ A-B button
㉚ PROGRAM button
㉛ DIRECT button
㉜ M (MEMORY) button
㉝ ANGLE button
㉞ AUDIO button

5. DISASSEMBLY METHOD

5-1. DISASSEMBLY METHOD

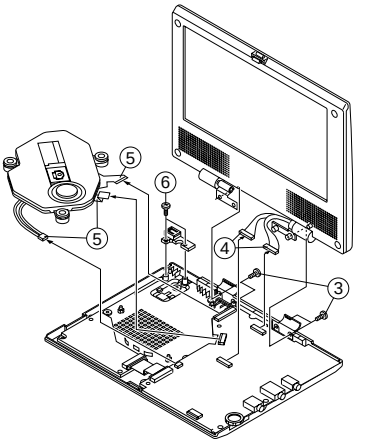
1. Remove the nine screws ①.
2. Loosen the two screws ②.
3. After opening the LCD unit, remove the hinge claw of cabinet A to detach it from cabinet B.

   Note: The power SW button is also removed. Be careful not to forget it when assembling the unit.
4. Remove the FFC Ⓐ from the main PWB.



5. Remove the screws ③.

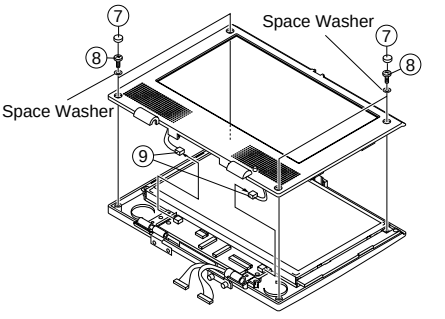
   Note: Check the screws before assembling because they are different depending on the right and left hinges.
6. Remove the connector ④ from the main PWB.
7. Remove the pickup FPC/sled lead connector ⑤.
8. Remove the screws ⑥ fixing the DC jack PWB.



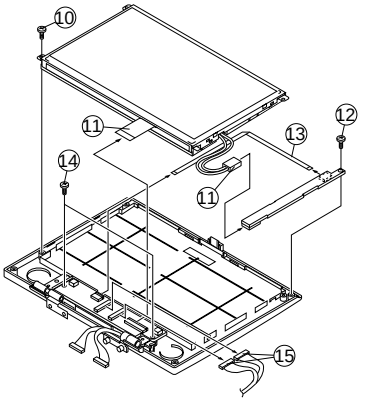
9. Remove the four LCD rubber caps ⑦.
10. Remove the four screws ⑧.

    Note: Be careful not to forget to put space washers when assembling because they are tightened with the above screws.
11. Remove the cabinet D. At this time, remove engagement claws (two on the upper LCD panel, two on the right and left sides, two on the lower LCD panel).

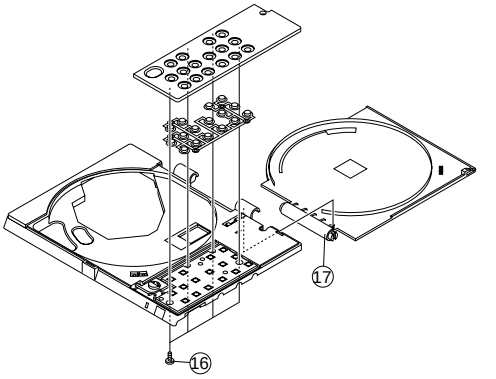
    Note: Do not break the claws on the right and left sides by opening cabinet C a little.
12. Remove the right and left speaker connectors ⑨.



13. Remove the screw ⑩.
14. Remove the FPC ⑪ from the connector.
15. Remove the screw ⑫.
16. Remove the FPC ⑬ from the connector.
17. Remove the screw ⑭.
18. Remove the connector ⑮.



19. Remove the four screws ⑯.
20. Remove the three claws on the control panel (front: 2 pcs., rear: 1 pc.).
21. Open the disc cover ⑰ 180˚ to remove it from cabinet A.

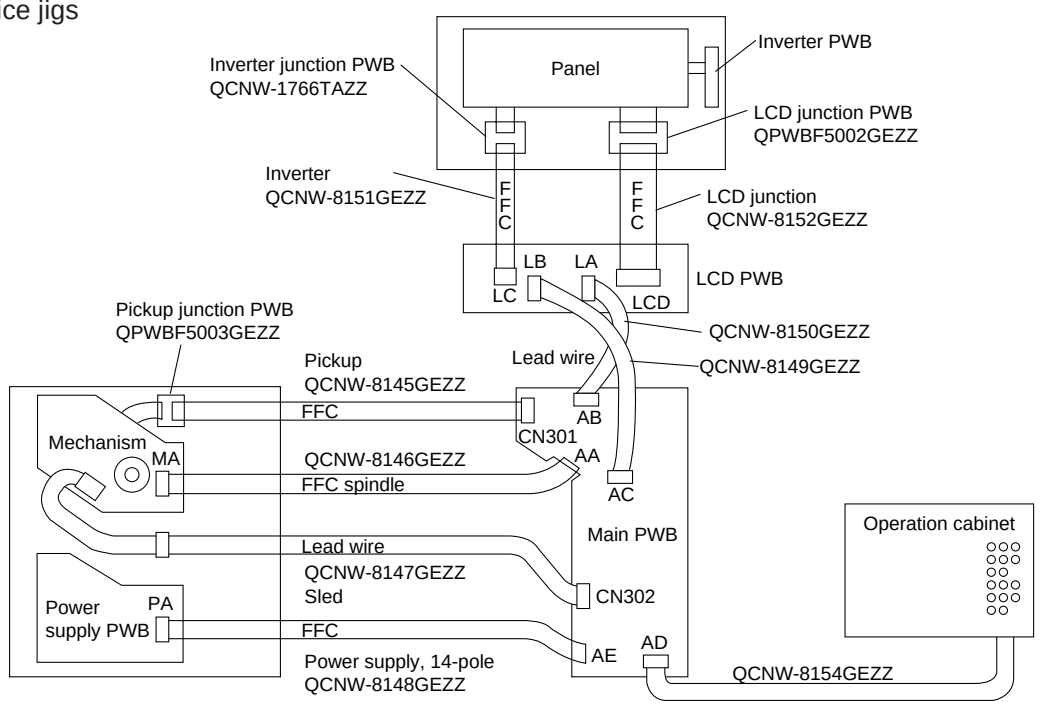


6. ADJUSTMENT METHOD

6-1. HARNESS LIST FOR SERVICE PARTS

Parts Code	Price Code	Remarks	Parts Code	Price Code	Remarks
QCNW-8145GEZZ	AQ	P.U. extension, 30-pin	QCNW-8151GEZZ	AQ	Inverter extension, 6-pin
QCNW-8146GEZZ	AQ	Spindle extension, 13-pin	QCNW-8152GEZZ	AQ	LCD panel extension, 32-pin
QCNW-8147GEZZ	AN	Sled extension, 2-pin	QCNW-8154GEZZ	AQ	Operation PWB extension, 12-pin
QCNW-8148GEZZ	AM	Power supply extension, 14-pin	QCNW-1766TAZZ	BF	Inverter junction PWB
QCNW-8149GEZZ	AQ	Main LCD extension, 14-pin	QPWBF5002GEZZ	BF	LCD junction PWB
QCNW-8150GEZZ	AQ	Main LCD extension, 14-pin	QPWBF5003GEZZ	BF	Pickup junction PWB

Drawing for service jigs



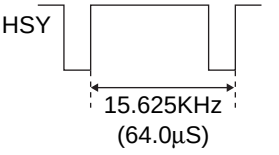
6-2. ADJUSTMENT PROCEDURE AND METHOD OF LCD PWB SIDE

1. 7.5V adjustment

Adjustment VR	R1102
Adjustment Point	Put a voltmeter between 6PIN (+7.5V) and 4PIN (GND) of TP1191.
Input Signal/Setting	No input
Adjustment Method	Adjust it to 7.50±0.02V.

2. Free run adjustment

Adjustment VR	R1104
Adjustment Point	Observe the 3PIN of TP1191 with a frequency counter.
Input Signal/Setting	No input, external input mode
Adjustment Method	Adjust it so as to get the HSY frequency of 15.625±0.01KHz (64.0µS).



3. Screen center adjustment

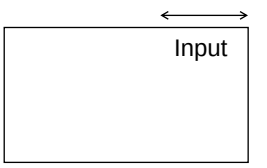
Adjustment VR	R1103
Adjustment Point	Visual observation of the panel
Input Signal/Setting	Monoscope full screen
Adjustment Method	Adjust the screen so that it is located in the center.

6-3. CHECK ITEMS OF LCD PWB SIDE

1. Power supply voltage check

Adjustment Point	Put voltmeters in 4PIN (GND), 5PIN (-16V) and 7PIN (13V) of TP1191.
Input Signal/Setting	Check in the DVD mode.
Adjustment Method	Check that each voltage indicates -16±1V and 13±0.5V respectively.

2. Free run check

Adjustment Point	Check the panel visually by connecting to the checker.
Input Signal/Setting	External input
Adjustment Method	Check that the horizontal movement of ODS is 1 mm or less when inputting a signal in the external input mode with no signal input. 

6-4. ADJUSTMENT PROCEDURE AND METHOD OF MAIN PWB SIDE

1. Press the UP+DOWN key is pushed at the same time, and made power source on.
2. It moves to the special mode(SP MODE), and a BACKLIGHT(HI/LOW/OFF) key is pushed and turned off.
3. After setting is completed, a power source is turned off.
4. Again, a UP+DOWN key is pushed at the same time, and a power source is turned on and made special mode.
5. An INPUT/ DVD key is pushed, and it becomes adjustment mode.
6. Each operation in the adjustment mode changes as follows:

(1) Switch the adjustment block with the TILT key input.

DAC adjustment → OPT adjustment → BAT adjustment →

(2) Perform paging of each adjustment block with the RETARN key.

→ TV1 → TV2 → TV3 →

(3) Switch each adjustment item with the menu key input.

TV1 adjustment

→ GAM0 → SBRI → GPOS → CONT →

TV2 adjustment

→ WB-R → WB-B → SCOL → STIN →

TV3 adjustment

→ COM → OSDH → BBRI → GAM2 →

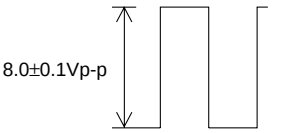
(4) Change each adjustment value with the left or right cursor key.

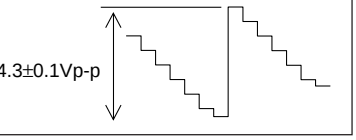
1. DAC adjustment

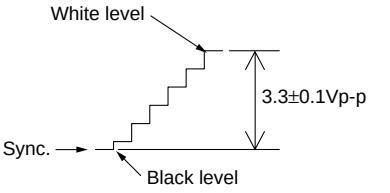
(1) TV1 adjustment

Adjustment VR	GAM0
	Initial value "44" adjustment is unnecessary.

Adjustment VR	SBRI
Adjustment Point	————
Input Signal/Setting	It is set in "56".

Adjustment VR	GPOS
Adjustment Point	Connect the oscilloscope to COM output (6PIN of TP1901) and GND.
Input Signal/Setting	Black-and-white 10STEP
Adjustment Method	Adjust the common amplitude to 8.0±0.1Vp-p. 

Adjustment VR	GAM2
Adjustment Point	Connect the oscilloscope to 3PIN (VG) and GND of TP1901.
Input Signal/Setting	Black-and-white 10STEP
Adjustment Method	Adjust the Vpp of VG to 4.3±0.1Vp-p. 

Adjustment VR	CONT
Adjustment Point	Connect the oscilloscope to 3PIN (VG) and GND of TP1901.
Input Signal/Setting	Black-and-white 10STEP
Adjustment Method	Adjust the Vpp of VG to 3.3Vp-p. 

(2) TV2 adjustment

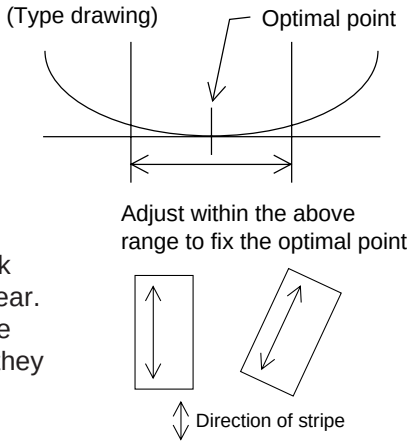
Adjustment VR	WB-R
Adjustment Point	Connect the oscilloscope to 3PIN (VG) and 4PIN (VR) of TP1901.
Input Signal/Setting	Black-and-white 10STEP
Adjustment Method	Adjust the white balance (red) so that peak-peak the equal of green and red output become equal.

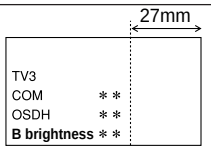
Adjustment VR	WB-B
Adjustment Point	Dual the oscilloscope to 3PIN (VG) and 5PIN (VB) and GND of TP1901.
Input Signal/Setting	Black-and-white 10STEP
Adjustment Method	Adjust the white balance (blue) so that peak-peak the equal of green and blue output become equal.

Adjustment VR	SCOL
Adjustment Point	Connect the oscilloscope to 5PIN (VB) and GND of TP1901.
Input Signal/Setting	100% color bar
Adjustment Method	Adjust the blue amplitude of the color bar (black level to peak level) to 3.8±0.1Vpp.

Adjustment VR	STIN
Adjustment Point	Connect the oscilloscope to 5PIN (VB) and GND of TP1901.
Input Signal/Setting	100% color bar
Adjustment Method	It is adjusted so that shakes of the waveform of the blue signal of the color bar may become the smallest.

(3) TV3 adjustment

Adjustment VR	COM
Adjustment Point	Specified adjustment jig (illuminometer) or visual observation
Input Signal/Setting	No input state Brightness: Center Perform it in a combination of PWB and the liquid crystal panel which will be supplied as products finally.
Adjustment Method	• When using the specified adjustment jig Connect the output of jig to the oscilloscope and adjust the waveform to the minimum point. At this time, perform the adjustment several times to fix the optimal point because the measuring value hardly changes around the optimal point. • In case of visual adjustment Stand or tilt the panel as shown in the figure and check by shaking your head and seeing whether stripes appear. If the adjustment is improper, you will see stripes in the longitudinal direction. Perform the adjustment so that they do not appear. 

Adjustment VR	OSDH
Adjustment Point	Visual observation
Adjustment method	Adjust the OSDH of TV3 to 27 mm from the right of screen. 

Adjustment VR	B BRI
Adjustment method	Set the B brightness to “76”.

2. OPT adjustment

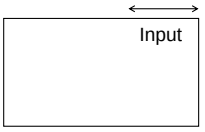
Adjustment VR	OPT adjustment
Initialization	It is set respectively in WIDE "03", OSDV"00", BL"01", PAL"00".

3. BAR adjustment

Adjustment VR	BAT adjustment
Initialization	Stabilized power supply, in the body, connection. It is made DVD start rise state, and a BACKLIGHT(HI/LOW/OFF) key is pushed and made "HI". The voltage of the stabilized power supply is adjusted to become 6.4±0.05V in the stabilized power supply connection part (at DC JACK).
Adjustment Method	It is set so that the numerical value of the BAT display may become "00"

6-5. CHECK AND READJUSTMENT

1. Free run check

Adjustment VR	R1104
Adjustment Point	Visual observation
Input Signal/Setting	External input
Check and Readjustment	Check that the horizontal movement of OSD position is 1 mm or less when inputting a signal in the external input mode with no signal input. If it is more than 1 mm, adjust it so as to get 1 mm or less. 

2. Screen position check

Adjustment VR	R1103
Adjustment Point	Visual observation of panel
Input Signal/Setting	Monoscope full screen
Check and Readjustment	Check whether the screen is located in the center. If it is not located in the center, adjust it to the center.

3. Luminance/gradation check

Adjustment VR	GPOS
Adjustment Point	Comparison with the standard set
Input Signal/Setting	10STEP signal
Check and	Check whether the luminance and gradation of 10STEP signal are not different in comparison with the standard set. If they are different, adjust them so as to get equal to the standard set.

4. Depth check

Adjustment VR	S depth
Adjustment Point	Comparison with the standard set
Check and Readjustment	Check whether the depth of color is not different in comparison with the standard set. If it is different, adjust it so as to get equal to the standard set.

5. Tint check

Adjustment VR	S tint
Adjustment Point	Comparison with the standard set
Check and Readjustment	Check whether the tone is not different in comparison with the standard set. If it is different, adjust it so as to get equal to the standard set.

7. TEST MODE

When a power source is put with pushing a key.

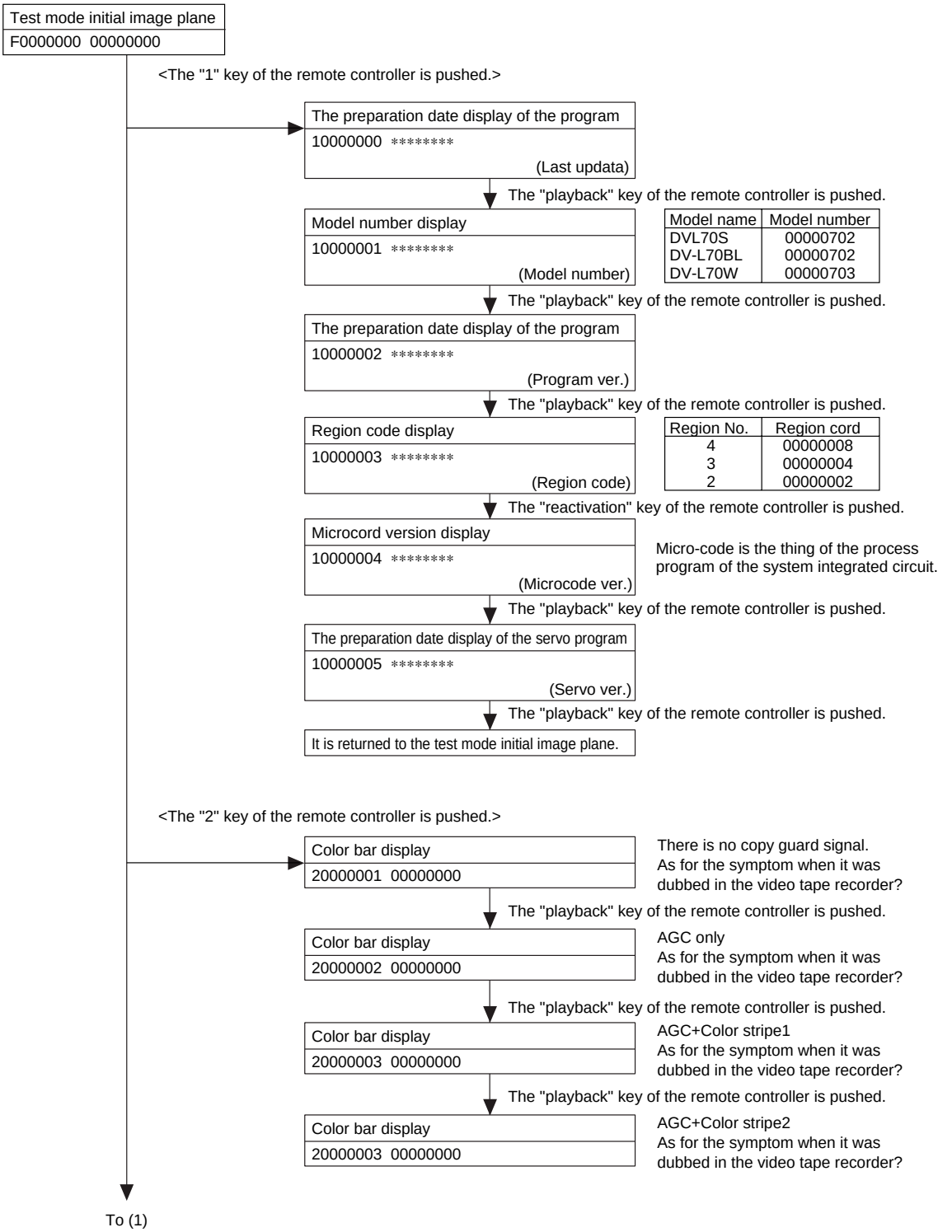
Adjustment Mode	A power source is put with pushing ∧ and ∨.
ROM renewal mode	It is put with pushing a playback key and a still key.

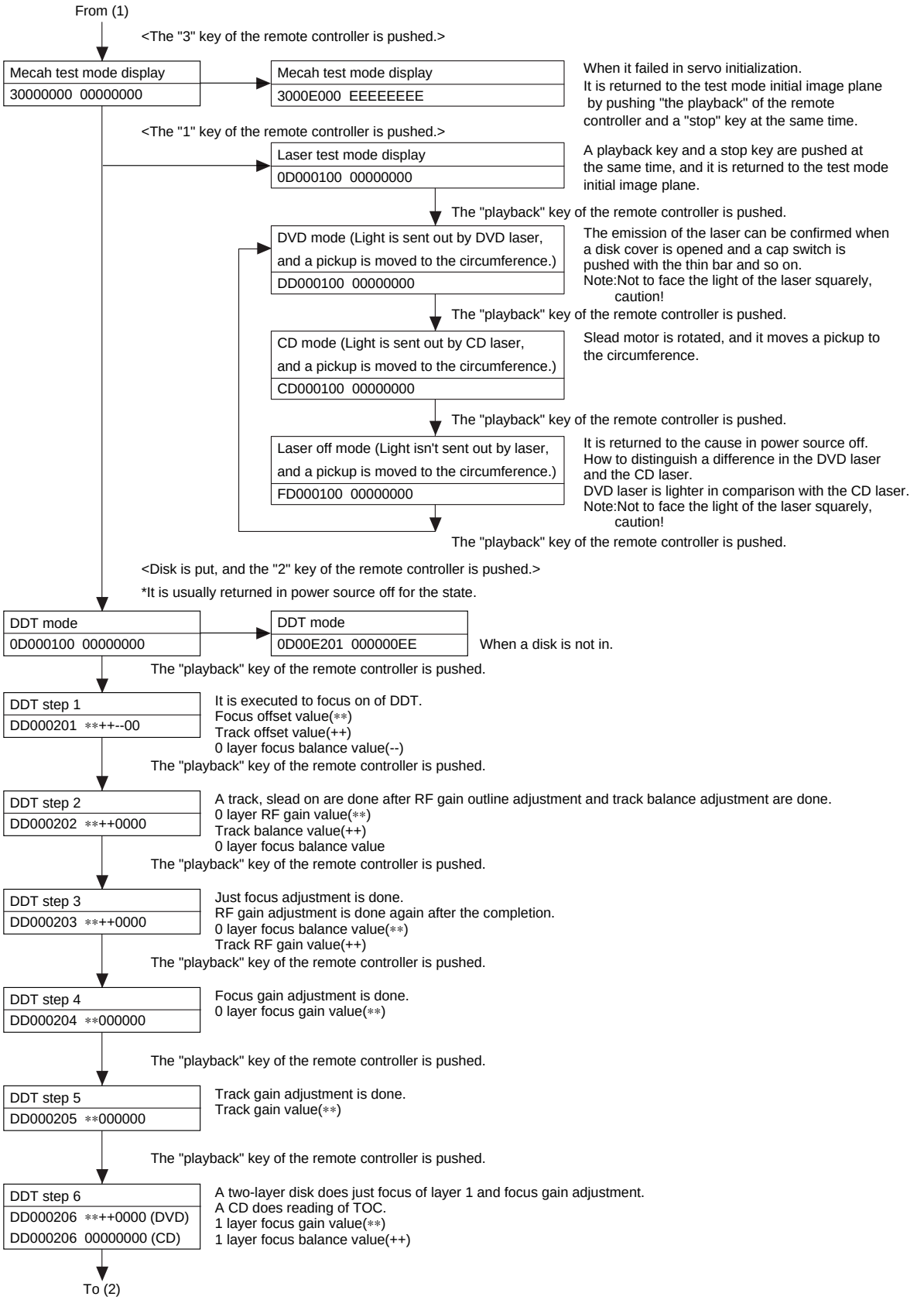
A power source is put.

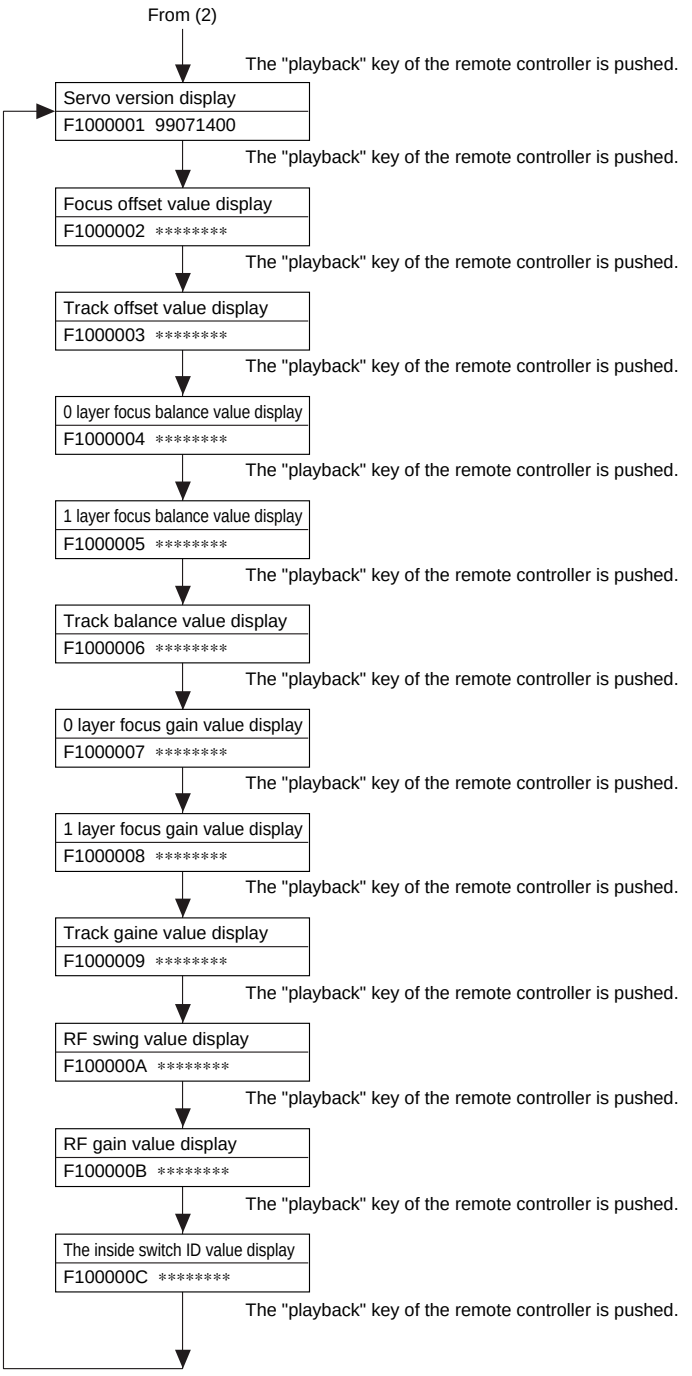
When there is a disc	Error rate display mode (There are a DVD and CD mode of it, and a disc is put, and a key manipulates.)
When there is	Test mode (Version display mode, color bar pattern display mode, mecha test mode.)

[The flow of the test mode]

A power source is put, and closing, a playback key and a stop key are pushed for about two seconds at the same time without a disk the disk cover. It goes into the (test mode.

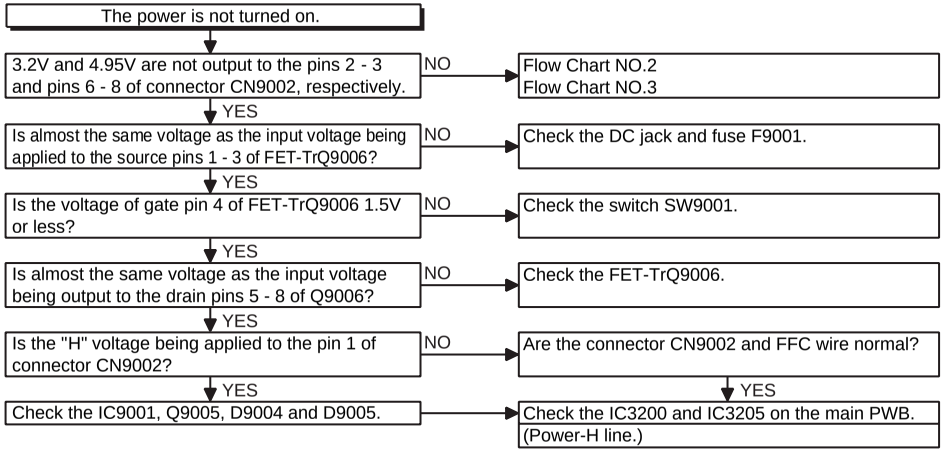

Test mode initial image plane
F0000000 00000000
<The "1" key of the remote controller is pushed.>
The preparation date display of the program
10000000 ********
(Last updata)
The "playback" key of the remote controller is pushed.
Model number display
10000001 ********
(Model number)
Model name | Model number
DVL70S | 00000702
DV-L70BL | 00000702
DV-L70W | 00000703
The "playback" key of the remote controller is pushed.
The preparation date display of the program
10000002 ********
(Program ver.)
The "playback" key of the remote controller is pushed.
Region code display
10000003 ********
(Region code)
Region No. | Region cord
4 | 00000008
3 | 00000004
2 | 00000002
The "reactivation" key of the remote controller is pushed.
Microcord version display
10000004 ********
(Microcode ver.)
Micro-code is the thing of the process program of the system integrated circuit.
The "playback" key of the remote controller is pushed.
The preparation date display of the servo program
10000005 ********
(Servo ver.)
The "playback" key of the remote controller is pushed.
It is returned to the test mode initial image plane.
<The "2" key of the remote controller is pushed.>
Color bar display
20000001 00000000
There is no copy guard signal.
As for the symptom when it was dubbed in the video tape recorder?
The "playback" key of the remote controller is pushed.
Color bar display
20000002 00000000
AGC only
As for the symptom when it was dubbed in the video tape recorder?
The "playback" key of the remote controller is pushed.
Color bar display
20000003 00000000
AGC+Color stripe1
As for the symptom when it was dubbed in the video tape recorder?
The "playback" key of the remote controller is pushed.
Color bar display
20000003 00000000
AGC+Color stripe2
As for the symptom when it was dubbed in the video tape recorder?
To (1)


From (1)
<The "3" key of the remote controller is pushed.>
Mecah test mode display
30000000 00000000
Mecah test mode display
3000E000 EEEEEEEE
When it failed in servo initialization.
It is returned to the test mode initial image plane by pushing "the playback" of the remote controller and a "stop" key at the same time.
<The "1" key of the remote controller is pushed.>
Laser test mode display
0D000100 00000000
A playback key and a stop key are pushed at the same time, and it is returned to the test mode initial image plane.
The "playback" key of the remote controller is pushed.
DVD mode (Light is sent out by DVD laser, and a pickup is moved to the circumference.)
DD000100 00000000
The emission of the laser can be confirmed when a disk cover is opened and a cap switch is pushed with the thin bar and so on.
Note:Not to face the light of the laser squarely, caution!
The "playback" key of the remote controller is pushed.
CD mode (Light is sent out by CD laser, and a pickup is moved to the circumference.)
CD000100 00000000
Slead motor is rotated, and it moves a pickup to the circumference.
The "playback" key of the remote controller is pushed.
Laser off mode (Light isn't sent out by laser, and a pickup is moved to the circumference.)
FD000100 00000000
It is returned to the cause in power source off.
How to distinguish a difference in the DVD laser and the CD laser.
DVD laser is lighter in comparison with the CD laser.
Note:Not to face the light of the laser squarely, caution!
The "playback" key of the remote controller is pushed.
<Disk is put, and the "2" key of the remote controller is pushed.>
*It is usually returned in power source off for the state.
DDT mode
0D000100 00000000
DDT mode
0D00E201 000000EE
When a disk is not in.
The "playback" key of the remote controller is pushed.
DDT step 1
DD000201 **++--00
It is executed to focus on of DDT.
Focus offset value(**)
Track offset value(++)
0 layer focus balance value(--)
The "playback" key of the remote controller is pushed.
DDT step 2
DD000202 **++0000
A track, slead on are done after RF gain outline adjustment and track balance adjustment are done.
0 layer RF gain value(**)
Track balance value(++)
0 layer focus balance value
The "playback" key of the remote controller is pushed.
DDT step 3
DD000203 **++0000
Just focus adjustment is done.
RF gain adjustment is done again after the completion.
0 layer focus balance value(**)
Track RF gain value(++)
The "playback" key of the remote controller is pushed.
DDT step 4
DD000204 **000000
Focus gain adjustment is done.
0 layer focus gain value(**)
The "playback" key of the remote controller is pushed.
DDT step 5
DD000205 **000000
Track gain adjustment is done.
Track gain value(**)
The "playback" key of the remote controller is pushed.
DDT step 6
DD000206 **++0000 (DVD)
DD000206 00000000 (CD)
A two-layer disk does just focus of layer 1 and focus gain adjustment.
A CD does reading of TOC.
1 layer focus gain value(**)
1 layer focus balance value(++)
To (2)

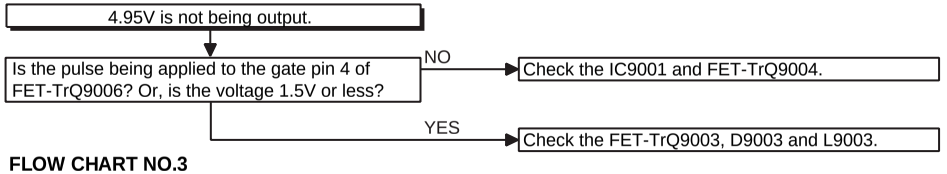

From (2)
The "playback" key of the remote controller is pushed.
Servo version display
F1000001 99071400
The "playback" key of the remote controller is pushed.
Focus offset value display
F1000002 ********
The "playback" key of the remote controller is pushed.
Track offset value display
F1000003 ********
The "playback" key of the remote controller is pushed.
0 layer focus balance value display
F1000004 ********
The "playback" key of the remote controller is pushed.
1 layer focus balance value display
F1000005 ********
The "playback" key of the remote controller is pushed.
Track balance value display
F1000006 ********
The "playback" key of the remote controller is pushed.
0 layer focus gain value display
F1000007 ********
The "playback" key of the remote controller is pushed.
1 layer focus gain value display
F1000008 ********
The "playback" key of the remote controller is pushed.
Track gaine value display
F1000009 ********
The "playback" key of the remote controller is pushed.
RF swing value display
F100000A ********
The "playback" key of the remote controller is pushed.
RF gain value display
F100000B ********
The "playback" key of the remote controller is pushed.
The inside switch ID value display
F100000C ********
The "playback" key of the remote controller is pushed.

8. TROUBLESHOOTING

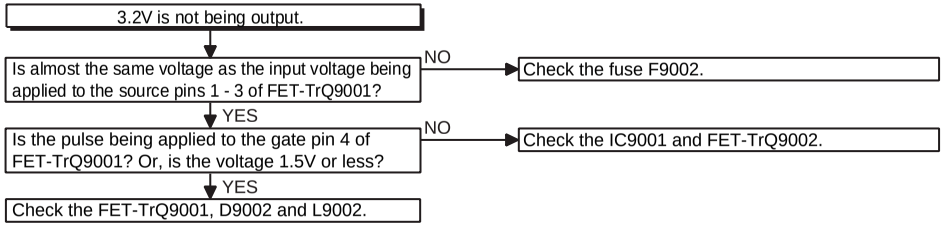
FLOW CHART NO.1


The power is not turned on.
3.2V and 4.95V are not output to the pins 2 - 3 and pins 6 - 8 of connector CN9002, respectively.
NO
Flow Chart NO.2
Flow Chart NO.3
YES
Is almost the same voltage as the input voltage being applied to the source pins 1 - 3 of FET-TrQ9006?
NO
Check the DC jack and fuse F9001.
YES
Is the voltage of gate pin 4 of FET-TrQ9006 1.5V or less?
NO
Check the switch SW9001.
YES
Is almost the same voltage as the input voltage being output to the drain pins 5 - 8 of Q9006?
NO
Check the FET-TrQ9006.
YES
Is the "H" voltage being applied to the pin 1 of connector CN9002?
NO
Are the connector CN9002 and FFC wire normal?
YES
YES
Check the IC9001, Q9005, D9004 and D9005.
Check the IC3200 and IC3205 on the main PWB. (Power-H line.)

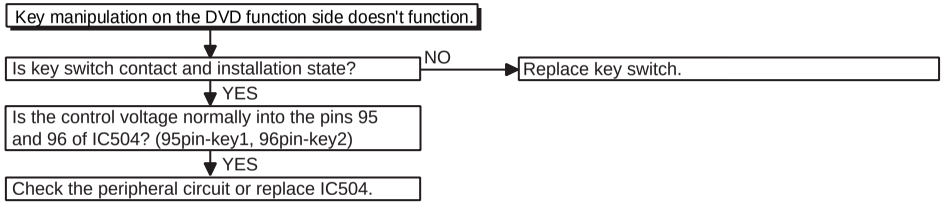
FLOW CHART NO.2


4.95V is not being output.
Is the pulse being applied to the gate pin 4 of FET-TrQ9006? Or, is the voltage 1.5V or less?
NO
Check the IC9001 and FET-TrQ9004.
YES
Check the FET-TrQ9003, D9003 and L9003.

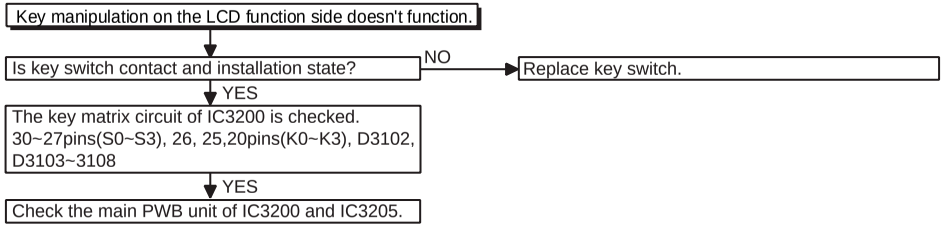
FLOW CHART NO.3


3.2V is not being output.
Is almost the same voltage as the input voltage being applied to the source pins 1 - 3 of FET-TrQ9001?
NO
Check the fuse F9002.
YES
Is the pulse being applied to the gate pin 4 of FET-TrQ9001? Or, is the voltage 1.5V or less?
NO
Check the IC9001 and FET-TrQ9002.
YES
Check the FET-TrQ9001, D9002 and L9002.

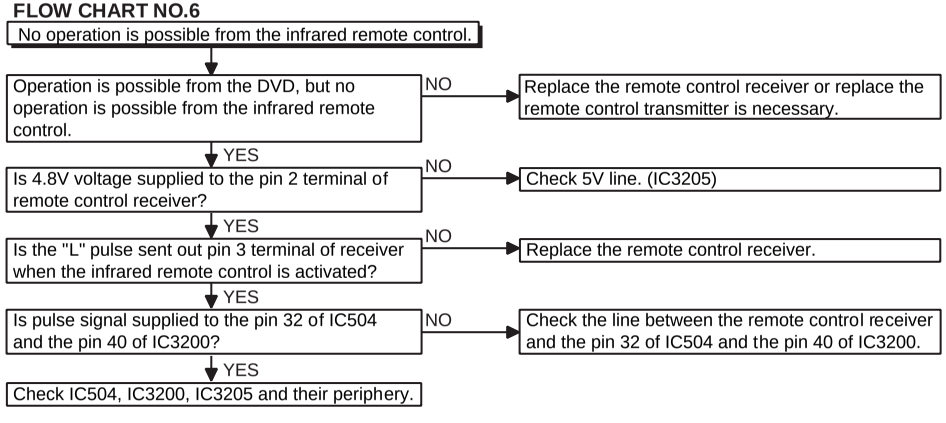
FLOW CHART NO.4


Key manipulation on the DVD function side doesn't function.
Is key switch contact and installation state?
NO
Replace key switch.
YES
Is the control voltage normally into the pins 95 and 96 of IC504? (95pin-key1, 96pin-key2)
YES
Check the peripheral circuit or replace IC504.

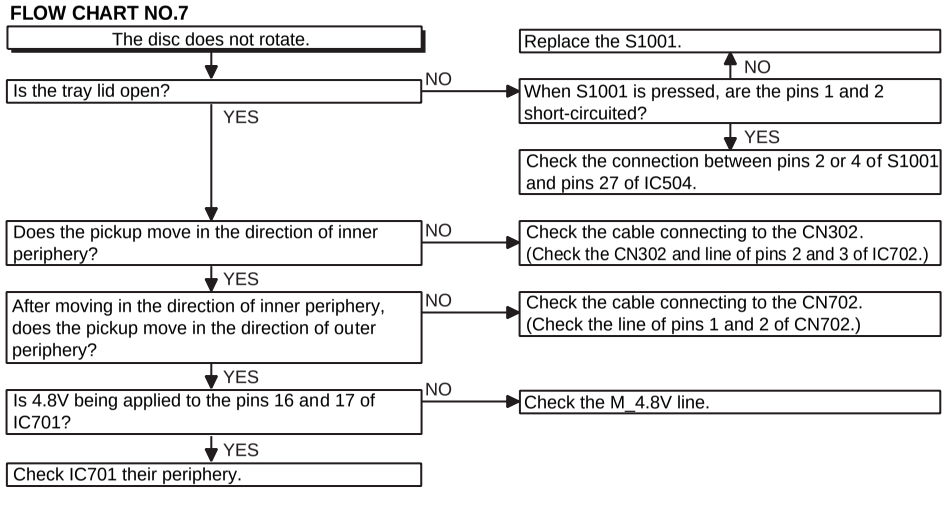
FLOW CHART NO.5


Key manipulation on the LCD function side doesn't function.
Is key switch contact and installation state?
NO
Replace key switch.
YES
The key matrix circuit of IC3200 is checked. 30~27pins(S0~S3), 26, 25,20pins(K0~K3), D3102, D3103~3108
YES
Check the main PWB unit of IC3200 and IC3205.

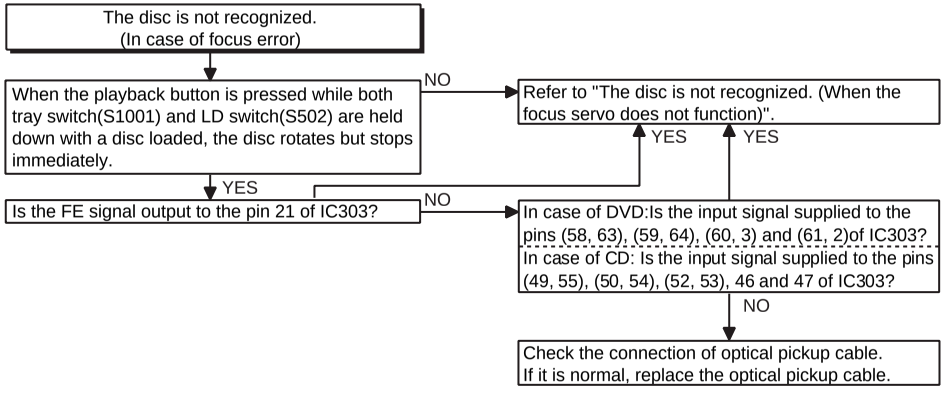
FLOW CHART NO.6


No operation is possible from the infrared remote control.
Operation is possible from the DVD, but no operation is possible from the infrared remote control.
NO
Replace the remote control receiver or replace the remote control transmitter is necessary.
YES
Is 4.8V voltage supplied to the pin 2 terminal of remote control receiver?
NO
Check 5V line. (IC3205)
YES
Is the "L" pulse sent out pin 3 terminal of receiver when the infrared remote control is activated?
NO
Replace the remote control receiver.
YES
Is pulse signal supplied to the pin 32 of IC504 and the pin 40 of IC3200?
NO
Check the line between the remote control receiver and the pin 32 of IC504 and the pin 40 of IC3200.
YES
Check IC504, IC3200, IC3205 and their periphery.

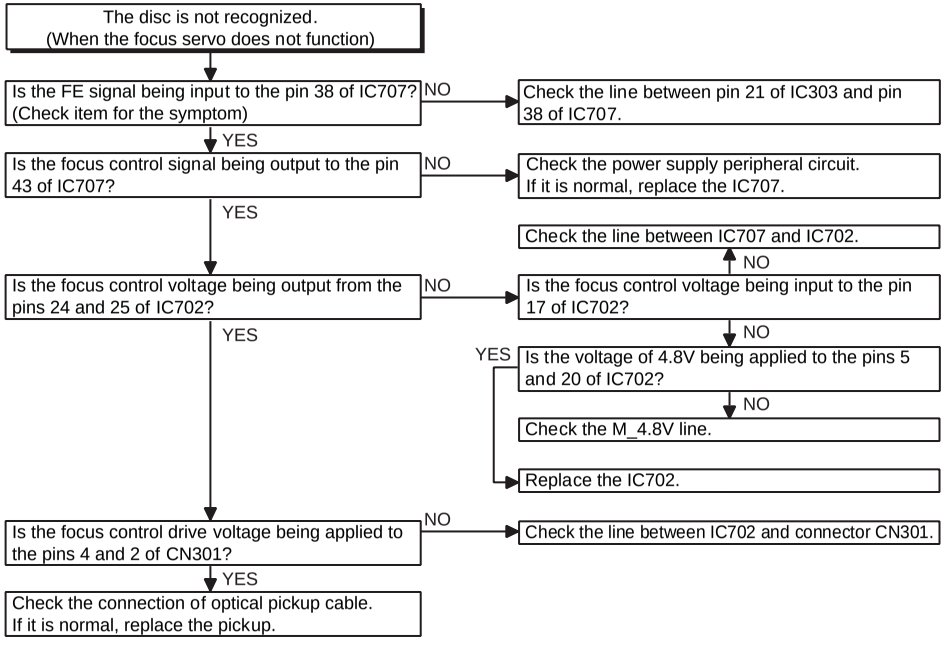
FLOW CHART NO.7


The disc does not rotate.
Replace the S1001.
NO
Is the tray lid open?
NO
When S1001 is pressed, are the pins 1 and 2 short-circuited?
YES
YES
Check the connection between pins 2 or 4 of S1001 and pins 27 of IC504.
Does the pickup move in the direction of inner periphery?
NO
Check the cable connecting to the CN302. (Check the CN302 and line of pins 2 and 3 of IC702.)
YES
After moving in the direction of inner periphery, does the pickup move in the direction of outer periphery?
NO
Check the cable connecting to the CN702. (Check the line of pins 1 and 2 of CN702.)
YES
Is 4.8V being applied to the pins 16 and 17 of IC701?
NO
Check the M_4.8V line.
YES
Check IC701 their periphery.

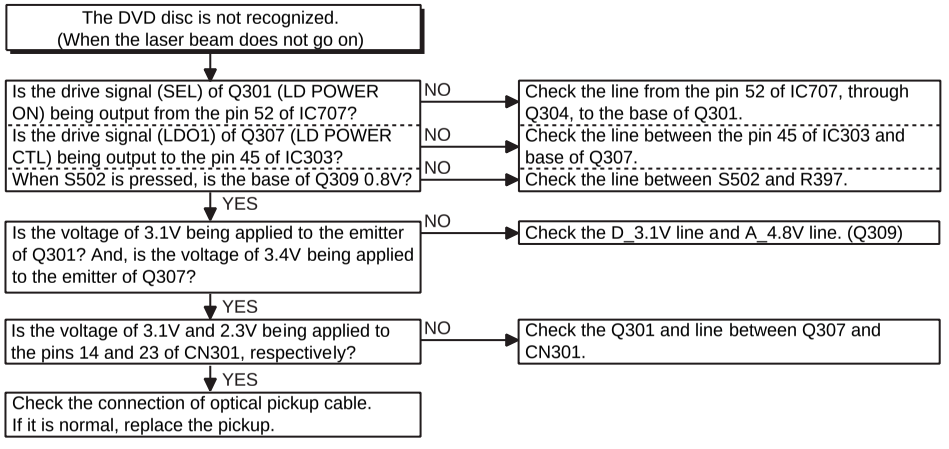
FLOW CHART NO.8


The disc is not recognized.
(In case of focus error)
When the playback button is pressed while both tray switch(S1001) and LD switch(S502) are held down with a disc loaded, the disc rotates but stops immediately.
NO
Refer to "The disc is not recognized. (When the focus servo does not function)".
YES
YES
YES
Is the FE signal output to the pin 21 of IC303?
NO
In case of DVD:Is the input signal supplied to the pins (58, 63), (59, 64), (60, 3) and (61, 2)of IC303?
In case of CD: Is the input signal supplied to the pins (49, 55), (50, 54), (52, 53), 46 and 47 of IC303?
NO
Check the connection of optical pickup cable.
If it is normal, replace the optical pickup cable.

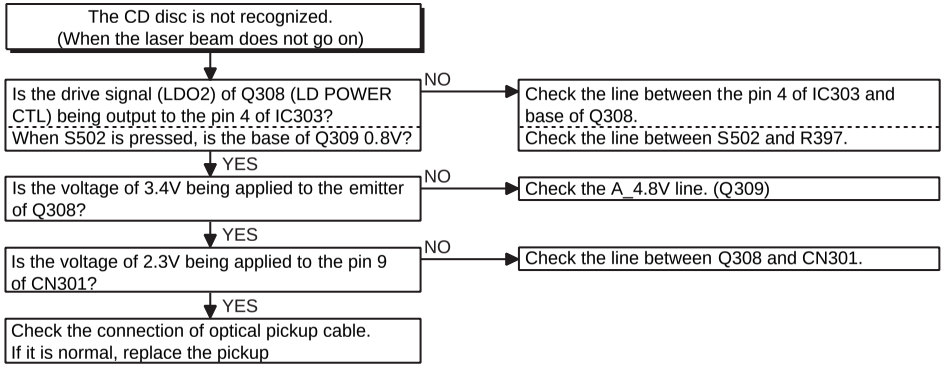
FLOW CHART NO.9


The disc is not recognized.
(When the focus servo does not function)
Is the FE signal being input to the pin 38 of IC707? (Check item for the symptom)
NO
Check the line between pin 21 of IC303 and pin 38 of IC707.
YES
Is the focus control signal being output to the pin 43 of IC707?
NO
Check the power supply peripheral circuit.
If it is normal, replace the IC707.
YES
Check the line between IC707 and IC702.
NO
Is the focus control voltage being output from the pins 24 and 25 of IC702?
NO
Is the focus control voltage being input to the pin 17 of IC702?
YES
NO
YES
Is the voltage of 4.8V being applied to the pins 5 and 20 of IC702?
NO
Check the M_4.8V line.
Replace the IC702.
Is the focus control drive voltage being applied to the pins 4 and 2 of CN301?
NO
Check the line between IC702 and connector CN301.
YES
Check the connection of optical pickup cable.
If it is normal, replace the pickup.

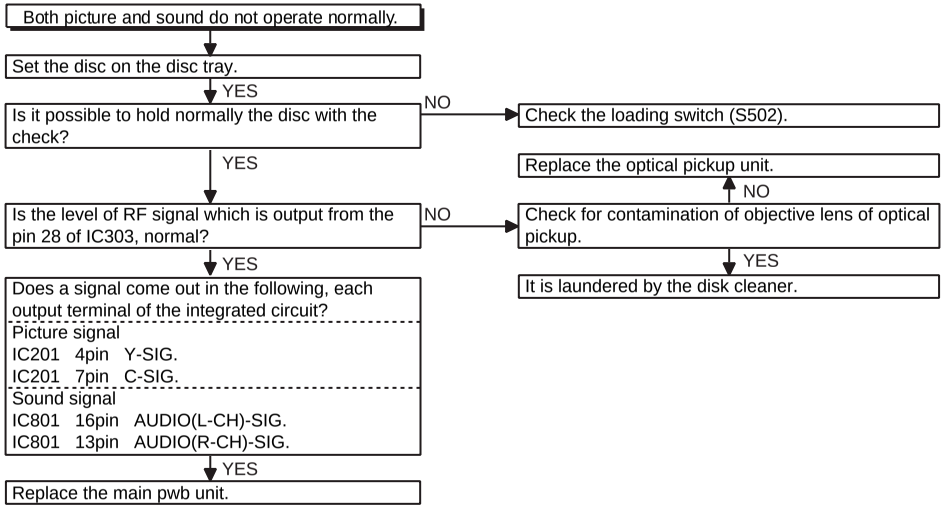
FLOW CHART NO.10


The DVD disc is not recognized.
(When the laser beam does not go on)
Is the drive signal (SEL) of Q301 (LD POWER ON) being output from the pin 52 of IC707?
NO
Check the line from the pin 52 of IC707, through Q304, to the base of Q301.
Is the drive signal (LDO1) of Q307 (LD POWER CTL) being output to the pin 45 of IC303?
NO
Check the line between the pin 45 of IC303 and base of Q307.
When S502 is pressed, is the base of Q309 0.8V?
NO
Check the line between S502 and R397.
YES
Is the voltage of 3.1V being applied to the emitter of Q301? And, is the voltage of 3.4V being applied to the emitter of Q307?
NO
Check the D_3.1V line and A_4.8V line. (Q309)
YES
Is the voltage of 3.1V and 2.3V being applied to the pins 14 and 23 of CN301, respectively?
NO
Check the Q301 and line between Q307 and CN301.
YES
Check the connection of optical pickup cable.
If it is normal, replace the pickup.

FLOW CHART NO.11


The CD disc is not recognized.
(When the laser beam does not go on)
Is the drive signal (LDO2) of Q308 (LD POWER CTL) being output to the pin 4 of IC303?
NO
Check the line between the pin 4 of IC303 and base of Q308.
When S502 is pressed, is the base of Q309 0.8V?
Check the line between S502 and R397.
YES
Is the voltage of 3.4V being applied to the emitter of Q308?
NO
Check the A_4.8V line. (Q309)
YES
Is the voltage of 2.3V being applied to the pin 9 of CN301?
NO
Check the line between Q308 and CN301.
YES
Check the connection of optical pickup cable.
If it is normal, replace the pickup

FLOW CHART NO.12


Both picture and sound do not operate normally.
Set the disc on the disc tray.
YES
Is it possible to hold normally the disc with the check?
NO
Check the loading switch (S502).
YES
Replace the optical pickup unit.
NO
Is the level of RF signal which is output from the pin 28 of IC303, normal?
NO
Check for contamination of objective lens of optical pickup.
YES
YES
It is laundered by the disk cleaner.
Does a signal come out in the following, each output terminal of the integrated circuit?
Picture signal
IC201 4pin Y-SIG.
IC201 7pin C-SIG.
Sound signal
IC801 16pin AUDIO(L-CH)-SIG.
IC801 13pin AUDIO(R-CH)-SIG.
YES
Replace the main pwb unit.

FLOW CHART NO.13

A video signal doesn't come out in the outside projected image output terminal (J6002).

Does a signal come out in the following, each output terminal of the integrated circuit?
Picture signal
IC2102 12pin Y-SIG. — NO → The outside output terminal (J6002) peripheral is checked from pins 12 and 8 of IC2102.
IC2102 8pin C-SIG.
IC2102 10pin CVBS-SIG. — NO → The VIDEO DRIVER circuit composed of Q2201, Q2206 is examined.

NO

Check the peripheral circuit of IC2102, Q1805, Q2102, D2301, D2303.

FLOW CHART NO.14

Picture do not operate normally.

A disk is set on the tray, and played back.
It confirms that there is no problem by flowchart NO.12.

YES

Are the video signals inputted to the pins of LCD DECODER IC1801.
IC1801 3pin Y-SIG. — NO → Check the line between the pin 4 of IC201 and pin 3 of IC1801. (Q203~204, IC2101, Q1801, Q1807, Q1808)
IC1801 5pin C-SIG. — NO → Check the line between the pin 7 of IC201 and pin 5 of IC1801. (Q201~202)

YES

Do 19 of IC1801, 21, 24 pin (VR, VG, VB) output appear? — NO → Check the peripheral circuit of IC1801.

YES

Is a power source being supplied to the LCD panel normally?
VGH(+13V), VSS(-16V), VCC(-10.9V), VSH(4.8V), VGL(-10V) — NO → A LCD panel power circuit and rogic circuit are examined. (IC1000, Q1100, T1100, etc.)

YES

Doesn't the voltage adjustment of the line come off +7.5V? If it deviates, it is readjusted with R1102.

YES

Is the COM2 bias level of the LCD panel normal? — NO → COMMON AMP., CURRENT DET. circuit are examined. (Q1102~1103, IC1103, etc.)

YES

COMMON Doesn't AMP. adjustment come off?
If it deviates, it is readjusted based on the GPOS adjustment.

YES

Is TFT LCD CONTROL PROCESSOR (IC1101) normal? — NO → Check the peripheral circuit of IC1101.

YES

LCD panel peripheral circuit and the existence of the failure place of the appearance are confirmed.

FLOW CHART NO.15

No picture

Is the backlight going on? — NO → Is each voltage of CN1105 normal? — NO → Check the pin 49 of IC3200 and pin 9 of IC3201.

YES

Is each voltage of CN1105 normal? — YES → Is the oscillation of inverter normal? — NO → Replace the backlight.

YES

Is the oscillation of inverter normal? — NO → Replace the inverter unit.

YES

Is the voltage of pins 5, 6, 7, and 8 of TP1191 normal? — NO → Check the periphery of IC1000, Q1100 and T1100.

YES

Is TFT LCD CONTROL PROCESSOR (IC1101) normal? — NO → Check the periphery of IC1101.

YES

LCD panel peripheral circuit and the existence of the failure place of the appearance are confirmed.

FLOW CHART NO.16

Colour of the picture image is abnormal.

Does 7 pin of IC1801 gain the control voltage (about 3.1V) of TINT? — NO → Check the periphery circuit 7 pin of IC1801.

YES

Is white balance normal? — NO → The readjustment of white balance is done.

YES

Are 19 of IC1801, 21, 24 pin (VR, VG, VB) output normal? — NO → Check the chroma periphery circuit of IC1801.

YES

Check the LCD panel unit.

FLOW CHART NO.17

A colour doesn't have it about the picture image.

Is (the 14,16 pin of IC1801) doing oscillation (4.43MHz) with VCO of the chroma circuit normally? — NO → Check the periphery circuit of X1801 and pins 14, 16 of IC1801.

YES

Is the outside horizontal synchronizing of 34 pin of IC1801 normal? — NO → Check the pins 38, 44, 43 of IC1101 and L1109, D1105, IC1102, Q1101, etc.

YES

Does 6 pin of IC1801 gain the control voltage (about 3.0V) of COLOUR? — NO → Check the peripheral circuit 6 pins of IC1801.

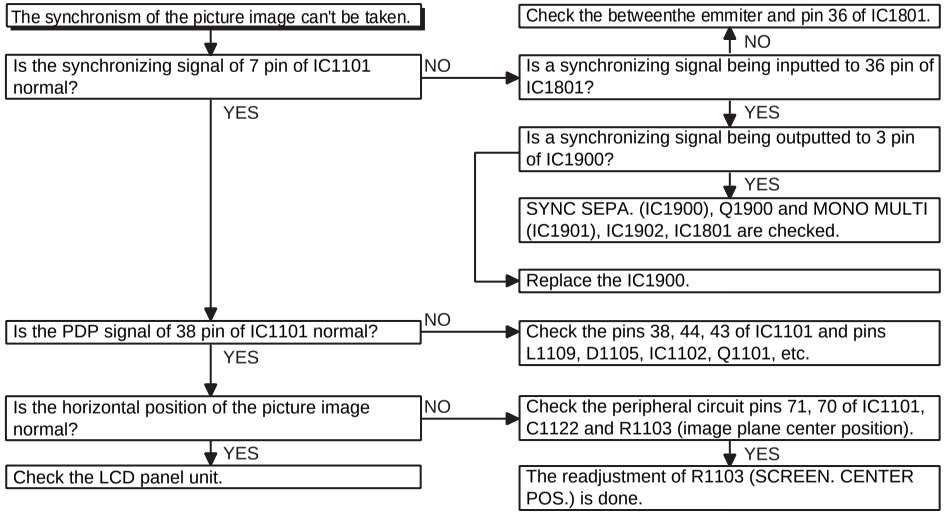
NO

Are 19 of IC1801, 21, 24 pin (VR, VG, VB) output normal? — NO → Check the chroma periphery circuit of IC1801.

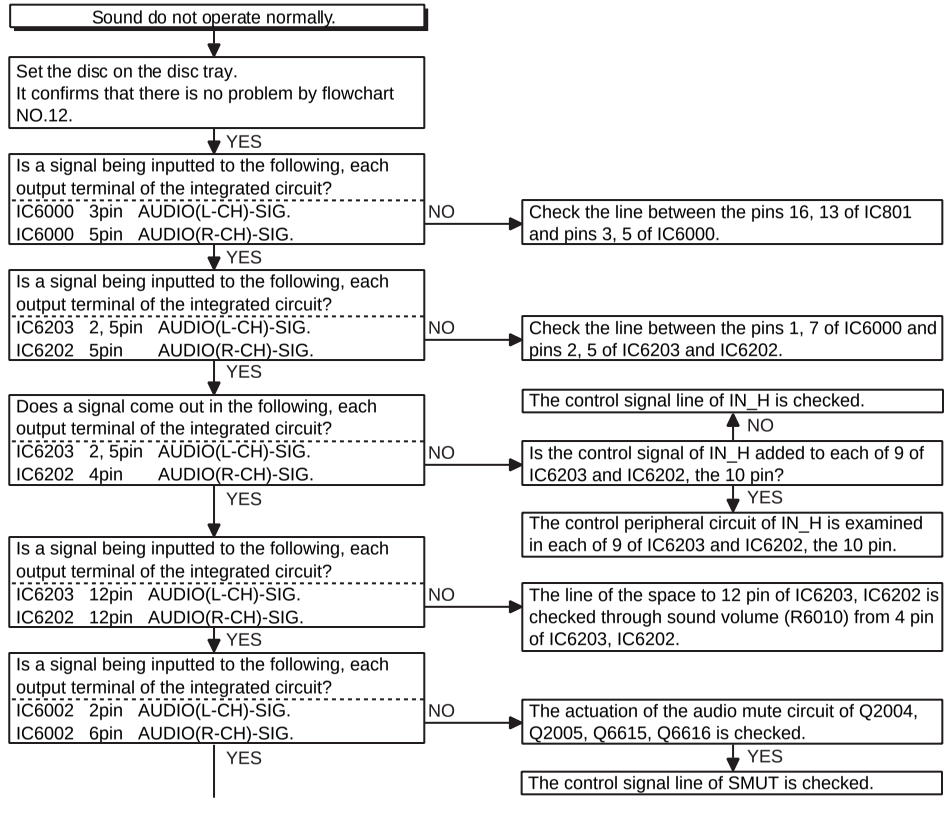
NO

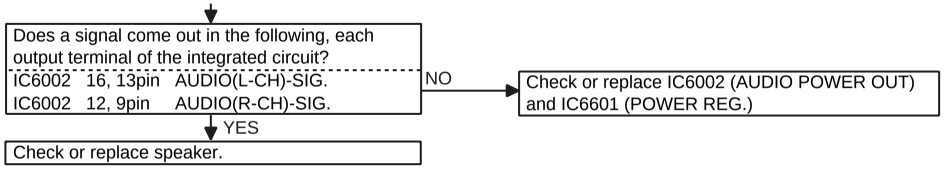
Check the LCD panel unit.

FLOW CHART NO.18

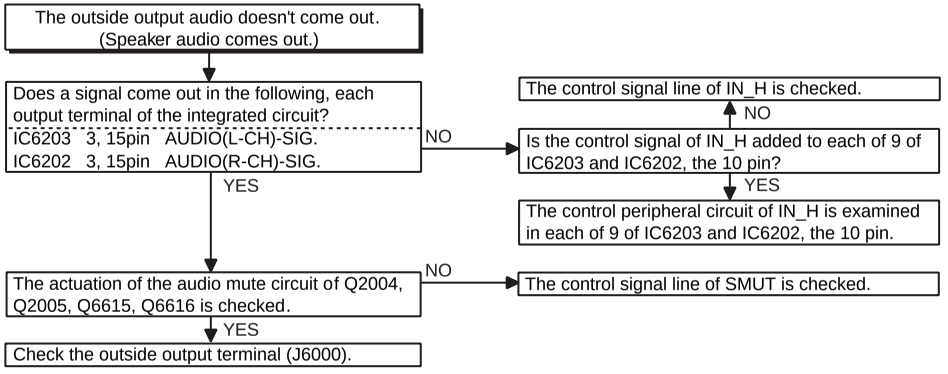

The synchronism of the picture image can't be taken.
Is the synchronizing signal of 7 pin of IC1101 normal?
NO
Is a synchronizing signal being inputted to 36 pin of IC1801?
NO
Check the betweenthe emmiter and pin 36 of IC1801.
YES
YES
Is a synchronizing signal being outputted to 3 pin of IC1900?
YES
SYNC SEPA. (IC1900), Q1900 and MONO MULTI (IC1901), IC1902, IC1801 are checked.
Replace the IC1900.
Is the PDP signal of 38 pin of IC1101 normal?
NO
Check the pins 38, 44, 43 of IC1101 and pins L1109, D1105, IC1102, Q1101, etc.
YES
Is the horizontal position of the picture image normal?
NO
Check the peripheral circuit pins 71, 70 of IC1101, C1122 and R1103 (image plane center position).
YES
YES
Check the LCD panel unit.
The readjustment of R1103 (SCREEN. CENTER POS.) is done.

FLOW CHART NO.19

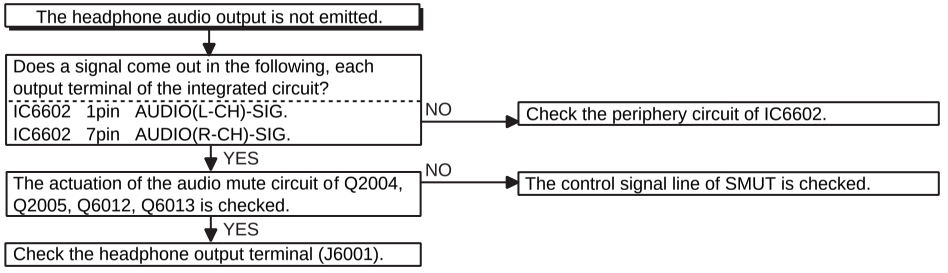

Sound do not operate normally.
Set the disc on the disc tray.
It confirms that there is no problem by flowchart NO.12.
YES
Is a signal being inputted to the following, each output terminal of the integrated circuit?
IC6000 3pin AUDIO(L-CH)-SIG.
IC6000 5pin AUDIO(R-CH)-SIG.
NO
Check the line between the pins 16, 13 of IC801 and pins 3, 5 of IC6000.
YES
Is a signal being inputted to the following, each output terminal of the integrated circuit?
IC6203 2, 5pin AUDIO(L-CH)-SIG.
IC6202 5pin AUDIO(R-CH)-SIG.
NO
Check the line between the pins 1, 7 of IC6000 and pins 2, 5 of IC6203 and IC6202.
YES
Does a signal come out in the following, each output terminal of the integrated circuit?
IC6203 2, 5pin AUDIO(L-CH)-SIG.
IC6202 4pin AUDIO(R-CH)-SIG.
NO
The control signal line of IN_H is checked.
NO
Is the control signal of IN_H added to each of 9 of IC6203 and IC6202, the 10 pin?
YES
The control peripheral circuit of IN_H is examined in each of 9 of IC6203 and IC6202, the 10 pin.
YES
Is a signal being inputted to the following, each output terminal of the integrated circuit?
IC6203 12pin AUDIO(L-CH)-SIG.
IC6202 12pin AUDIO(R-CH)-SIG.
NO
The line of the space to 12 pin of IC6203, IC6202 is checked through sound volume (R6010) from 4 pin of IC6203, IC6202.
YES
Is a signal being inputted to the following, each output terminal of the integrated circuit?
IC6002 2pin AUDIO(L-CH)-SIG.
IC6002 6pin AUDIO(R-CH)-SIG.
NO
The actuation of the audio mute circuit of Q2004, Q2005, Q6615, Q6616 is checked.
YES
YES
The control signal line of SMUT is checked.


Does a signal come out in the following, each output terminal of the integrated circuit?
IC6002 16, 13pin AUDIO(L-CH)-SIG.
IC6002 12, 9pin AUDIO(R-CH)-SIG.
NO
Check or replace IC6002 (AUDIO POWER OUT) and IC6601 (POWER REG.)
YES
Check or replace speaker.

FLOW CHART NO.20


The outside output audio doesn't come out. (Speaker audio comes out.)
Does a signal come out in the following, each output terminal of the integrated circuit?
IC6203 3, 15pin AUDIO(L-CH)-SIG.
IC6202 3, 15pin AUDIO(R-CH)-SIG.
NO
The control signal line of IN_H is checked.
NO
Is the control signal of IN_H added to each of 9 of IC6203 and IC6202, the 10 pin?
YES
The control peripheral circuit of IN_H is examined in each of 9 of IC6203 and IC6202, the 10 pin.
YES
The actuation of the audio mute circuit of Q2004, Q2005, Q6615, Q6616 is checked.
NO
The control signal line of SMUT is checked.
YES
Check the outside output terminal (J6000).

FLOW CHART NO.21

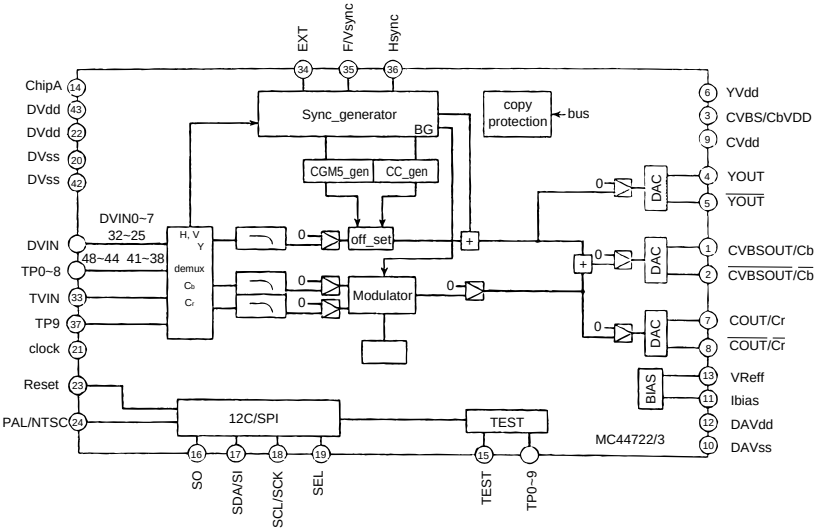

The headphone audio output is not emitted.
Does a signal come out in the following, each output terminal of the integrated circuit?
IC6602 1pin AUDIO(L-CH)-SIG.
IC6602 7pin AUDIO(R-CH)-SIG.
NO
Check the periphery circuit of IC6602.
YES
The actuation of the audio mute circuit of Q2004, Q2005, Q6012, Q6013 is checked.
NO
The control signal line of SMUT is checked.
YES
Check the headphone output terminal (J6001).

9. IC FUNCTION LIST

9-1. IC201 MC44722A DIGITAL VIDEO ENCORDER

Pin No.	Terminal name	I/O	Operation function
1	CVBS/Cb	O	Analog composite video signal output or Cb signal output current drive (positive)
2	$\overline{\text{CVBS/Cb}}$	O	Analog composite video signal output or Cb signal output current drive (negative)
3	CVBS/Cb Vdd		Power Supply for CVBS / Cb DAC circuit
4	Y	O	Analog luminance signal output current drive (positive)
5	$\overline{\text{Y}}$	O	Analog luminance signal output current drive (negative)
6	YVdd		Power Supply for Y DAC circuit
7	C/Cr	O	Analog chrominance signal output or Cr signal output current drive (positive)
8	$\overline{\text{C/Cr}}$	O	Analog chrominance signal output or Cr signal output current drive (negative)
9	CVdd		Power Supply for C/Cr DAC circuit
10	DA Vss		Ground for DAC circuit
11	Ibias	O	Reference current for the 3 DACs
12	DA Vdd		Power Supply for DAC circuit
13	VReff		Reference full scale voltage for the 3 DACs
14	ChipA		I2C chip address select {0 : 42(hex)/43(hex) 1 : 1C(hex)/1D(hex)}
15	TEST	I	TEST pin (Ground)
16	SO	z(O)	If SPI mode, serial data output / If I2C mode, connect to ground
17	SDA/SI	I/O(I)	Serial data input, Open drain output / If SPI mode, serial data input
18	SCL/SCK	I	Serial clock
19	SEL	(I)	Connect to Ground / If SPI mode, this pin is chip select
20	DVss		Ground for Digital circuit
21	CLOCK	I	27MHz clock input
22	DVdd		Power Supply for Digital circuit
23	Reset	I	Reset signal, active LOW
24	PAL/NTSC	I	NTSC/PAL select. This pin active only Reset time.(NTSC : Low PAL : High)
25-32	DVIN7-0	I	8-bit Multiplexd Y/Cr/Cb 4:2:2 data (ITU Rec656) input (1) or Multiplexd Y data (ITU-Rec656/601) input in 16-bit input mode (DVIN7 : MSB)
33	TVIN	I	TEST data input
34	EXT	I/O	Csync/Frame sync output or external VBI information input
35	F/Vsync	I/O	Frame sync or Vertical sync input/output
36	Hsync	I/O	Horizontal sync input/output
37	TP9	I/O	MUX switch in 8-bit X 2 Multiplexed Y/Cr/Cb 4:2:2 data (ITU-Rec656) input mode, or Test data input/output
38-41	TP8-5	I/O	8-bit Multiplexed 4:2:2 data (ITU-Rec656/601) input (2), or Multiplexed Cr/Cb data (ITU-Rec656/601) input in 16-bit input mode (MSB : TP8), or Test data input/output
42	DVss		Ground for Digital circuit
43	DVdd		Power Supply for Digital circuit
44-47	TP4-1	I/O	8-bit Multiplexed 4:2:2 data (ITU-Rec656/601) input (2), or Multiplexed Cr/Cb data (ITU-Rec656/601) input in 16-bit input mode (LSB : TP1), or Test data input/output
48	TP0	I/O	For test (should be ground)

• Block Diagram

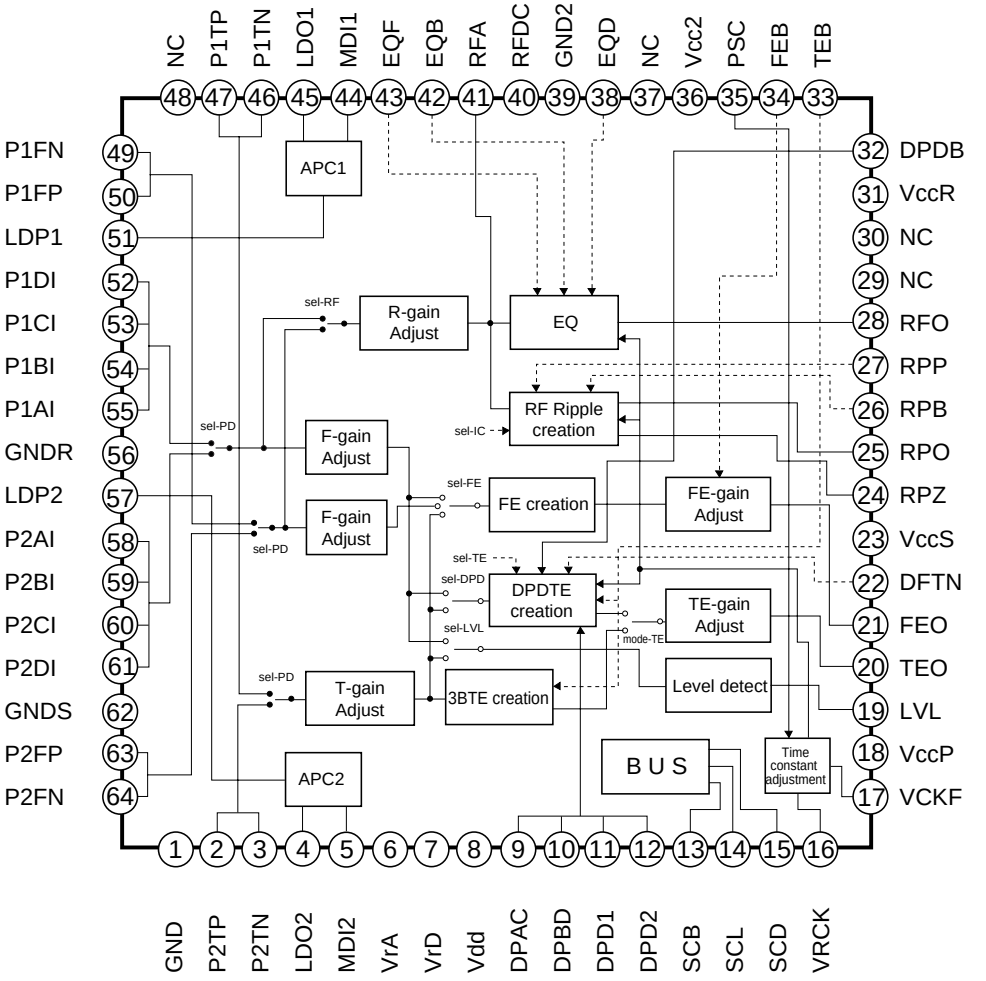


9-2. IC303 IX1517GE RF SIGNAL PROCESSOR

Pin No.	Terminal name	I/O	Operation function	Terminal DC Voltage(TYP.)	Remarks
1	GND	–	GND terminal.	–	
2	P2TP	I	TE+input (CD)	VrA	
3	P2TN	I	TE–input (CD)	VrA	
4	LDO2	O	Drive ouput	–	
5	MDI2	I	Monitor input	–	
6	VrA	O	Analog VREF	2.1[V]	
7	VrD	O	Digital VREF	–	Vdd 1/2
8	Vdd	I	Power terminal		4.2V (3.3V)
9	DPAC	–	DPD AC combination capacity 1	–	
10	DPBD	–	DPD AC combination capacity 2	–	
11	DPD1	–	DPD integral capacity 1	–	
12	DPD2	–	DPD integral capacity 2	–	
13	SCB	I	Control line (Bit clock)	2.2[V]	
14	SCL	I	Control line (Latch signal)	2.2[V]	
15	SCD	I	Control line (Sirial Data)	2.2[V]	
16	VRCK	I	Reference clock input	2.3[V]	When frequency is increased, the filters excepting the servo LPF are shifted to high frequency side.
17	VCKF	–	Capacity for time constant adjustment	–	
18	VccP	–	Power terminal	–	
19	LVL	O	Servo addition output	Vrd x (1/2)	
20	TEO	O	TE output	VrD	
21	FEO	O	FE output	VrD	
22	DFTN	I	DPD difect	–	Low DPD output: Mute
23	VccS	–	Power terminal (servo)	–	
24	RPZ	O	RF ripple center voltage	VrD	
25	RPO	O	RF ripple output	VrD	
26	RPB	O	RF ripple bottom	–	
27	RPP	O	RF ripple peak	–	
28	RFO	O	Equalizing RF output	2.3[V]	
29	NC	–	NC terminal	–	To be connected to GND
30	NC	–	NC terminal	–	To be connected to GND
31	VccR	–	Power terminal (RF)	–	
32	DPDB	I	Pit depth adjustment	VrD	When D PDB is raised, the A/B side delay increases.
33	TEB	I	TE balance	VrD	When TEB is raised, the TP side gain increases and the A+C side delay increases.
34	FEB	I	FE balance	VrD	When FEB is raised, the A+C (FP) side gain increases.
35	PSC	I	VRCK frequency division ON/OFF	–	High: Frequency division OFF
36	Vcc2	–	Power terminal	–	
37	NC	–	NC terminal	VrD	To be connected to VrD, or to GND through C
38	EQD	I	Group delay correction	VrD	When EQD is raised, the group delay increases at the right side.
39	GND2	–	GND terminal.	–	
40	RFDC	–	DC feedback capacity	–	
41	RFA	O	RF total addition output	2.2[V]	
42	EQB	I	Boost adjustment	VrD	When EQB is raised, the boost increases.
43	EQF	I	Frequency adjustment	VrD	When EQF is raised, shift to the high frequency side occurs.
44	MDI1	I	Monitor input	–	
45	LDO1	O	Drive output	–	
46	P1TN	I	TE–input (DVD)	VrA	
47	P1TP	I	TE+input (DVD)	VrA	
48	NC	–	NC terminal	–	To be connected to GND
49	P1FN	I	FE–input (DVD)	VrA	
50	P1FP	I	FE+input (DVD)	VrA	
51	LDP1	I	APC polarity 1	–	Positive polarity when this terminal is connected to Vcc.
52	P1DI	I	D input (DVD)		

Pin No.	Terminal name	I/O	Operation function	Terminal DC Voltage(TYP.)	Remarks
53	P1CI	I	C input (DVD)	VrA	
54	P1BI	I	B input (DVD)	VrA	
55	P1AI	I	A input (DVD)	VrA	
56	GNDR	–	GND terminal (RF)	–	
57	LDP2	I	APC polarity 2	–	Positive polarity when this terminal is connected to Vcc.
58	P2AI	I	A input (CD)	VrA	
59	P2BI	I	B input (CD)	VrA	
60	P2CI	I	C input (CD)	VrA	
61	P2DI	I	D input (CD)	VrA	
62	GNDS	–	GND terminal (Servo)	–	
63	P2FP	I	FE+input (CD)	VrA	
64	P2FN	I	FE–input (CD)	VrA	

• Block Diagram



9-3. IC401 IX1484GE 4M DRAM

Terminal	Terminal name	Function
10~13,16~20,9	A0~A8,A9R	Address input
8	RAS	Row address strobe
23	CAS	Column address strobe
1~5,24~27	DQ1~DQ8	Data input/Data output
22	OE	Output enable
7	WE	Light enable
1, 14	Vcc	Power (5V)
15, 28	Vss	Ground (0V)
6, 21	NC	Not connected

9-4. IC402 IX1474GE DEM/ECC (DVD)

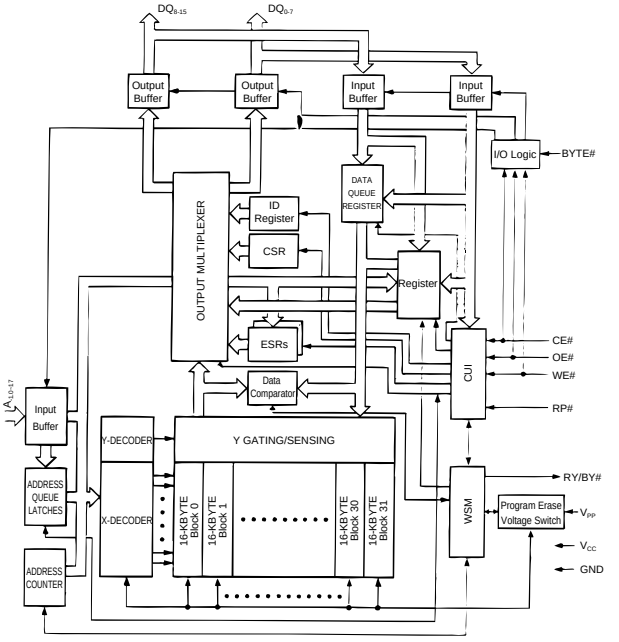
Pin No.	Terminal name	I/O	Operation function	Remarks
1	DPCK1	I	Signal processing reference clock input.	0.5-3.3Vp-p Feedback resistor built in.
2	DVDD3	–	Digital power. (3.3V)	For logic cell
3	SVCK1	I	Servo reference clock input. (Oscillation circuit input terminal)	3.3V-I/F Feedback resistor built in.
4	SVCK0	O	Servo reference clock output. (Oscillation circuit input terminal)	
5	DVSS	–	Digital power. (0V)	For logic cell
6	DVDD2	–	Digital power. (3.3V)	For logic cell
7	N.C.	–	User use prohibited.	Open
8	HDWR	I	MPU write signal.	TTL level
9	HDRD	I	MPU read signal.	TTL level
10	ECCCS	I	MPU chip selection.	TTL level
11	D8	I/O	MPU data bus.	TTL level
12	D9	I/O	MPU data bus.	TTL level
13	D10	I/O	MPU data bus.	TTL level
14	D11	I/O	MPU data bus.	TTL level
15	D12	I/O	MPU data bus.	TTL level
16	D13	I/O	MPU data bus.	TTL level
17	D14	I/O	MPU data bus.	TTL level
18	D15	I/O	MPU data bus.	TTL level
19	DVSS	–	Digital power. (0V)	For I/O cell
20	DVDD5	–	Digital power. (5V)	For I/O cell
21	HINT	O	MPU interruption signal. (Occurrence of interruption = “L”)	OPEN DRAIN
22	HA0	I	MPU address bus.	TTL level
23	HA1	I	MPU address bus.	TTL level
24	PLCK	I/O	Read channel clock input/output terminal.	
25	ED0	–	User use is prohibited (N.C.) since it is for shipping adjustment.	Open
26	ED1	–		
27	ED2	–		
28	ED3	–		
29	ED4	–		
30	ED5	–		
31	ED6	–		
32	ED7	–		
33	TEST	I	For shipping adjustment.	Set to “L”
34	PDON	O	PLL phase error signal output. (Negative polarity)	
35	PDOP	O	PLL phase error signal output. (Positive polarity)	
36	RLLD	O	RLL detection result output.	
37	LPFN	I	PLL loop filter amp. reverse input.	
38	LPFO	O	PLL loop filter amp. output.	
39	VCOF	O	VCO filter terminal.	
40	SLCO	O	Built-in comparator reference voltage output terminal.	
41	AVSS	–	Analog power. (0V)	
42	AVR	O	Non-PLL system analog reference potential. (1.65V)	
43	VRC	–	Resistance division point potential. (For analog reference potential generation: 1.65)	
44	PVR	O	PLL system analog reference potential. (1.65V)	
45	AVDD	–	Analog power. (3.3V)	
46	RVR2	–	2nd reference voltage. (For capacitor connection)	
47	RVDD	–	Exclusive-use power terminal. (3.3V)	
48	RFIN	I	RF signal input.	
49	RVSS	–	Exclusive-use power terminal. (0V)	
50	RVR1	–	1nd reference voltage. (For capacitor connection)	
51	DVR	I	DMO reference potential. (1.65V recommended)	
52	DMO	O	Disc equalizer output for DVD. (Triple value PWM + HiZ)	
53	RASN	O	External RAM row address selection. (Negative logic)	
54	CASN	O	External RAM row address selection. (Negative logic)	

Pin No.	Terminal name	I/O	Operation function	Remarks
55	MOEN	O	External RAM output permission signal.	
56	MWEN	O	External RAM read/write selection.	
57	DVSS	–	Digital power. (0V)	For logic cell
58	DVDD3	–	Digital power. (3.3V)	For logic cell
59	MA9	O	External RAM address bus.	
60	MA8	O	External RAM address bus.	
61	MA7	O	External RAM address bus.	
62	MA6	O	External RAM address bus.	
63	MA5	O	External RAM address bus.	
64	MA4	O	External RAM address bus.	
65	MA3	O	External RAM address bus.	
66	MA2	O	External RAM address bus.	
67	MA1	O	External RAM address bus.	
68	MA0	O	External RAM address bus.	
69	DVSS	–	Digital power. (0V)	For I/O cell
70	DVDD5	–	Digital power. (5V)	For I/O cell
71	MD7	I/O	External RAM data bus.	TTL level
72	MD6	I/O	External RAM data bus.	TTL level
73	MD5	I/O	External RAM data bus.	TTL level
74	MD4	I/O	External RAM data bus.	TTL level
75	MD3	I/O	External RAM data bus.	TTL level
76	MD2	I/O	External RAM data bus.	TTL level
77	MD1	I/O	External RAM data bus.	TTL level
78	MD0	I/O	External RAM data bus.	TTL level
79	SD7	O	MPEG data output.	
80	SD6	O	MPEG data output.	
81	SD5	O	MPEG data output.	
82	SD4	O	MPEG data output.	
83	DVSS	–	Digital power. (0V)	For logic cell
84	DVDD3	–	Digital power. (3.3V)	For logic cell
85	SD3	O	MPEG data output.	
86	SD2	O	MPEG data output.	
87	SD1	O	MPEG data output.	
88	SD0	O	MPEG data output.	
89	SERR	O	MPEG data reliability flag. (Data error: “L”)	
90	SOSO	O	MPEG output sector sync signal. (Sector top: “L”)	
91	SVAL	O	MPEG data effective flag. (Effective state: “L”)	
92	SDCK	O	MPEG data transfer clock.	
93	DVSS	–	Digital power. (0V)	For logic cell
94	SREQ	I	MPEG data request flag. (Request state: “L”)	TTL level
95	RSTN	I	Hard reset input. (Reset state: “L”)	
96	DVDD3	–	Digital power. (3.3V)	For logic cell
97	STDA	O	Operation state monitor data. (Output synchronizing with SDCK fall)	Common with PWM.
98	STCK	O	Operation state monitor sync signal. (Data top bit: “L”)	Common with PWM.
99	UPWM	O	General-use PWM output.	4mA, 5V-I/F
100	DVSS	–	Digital power. (0V)	For logic cell

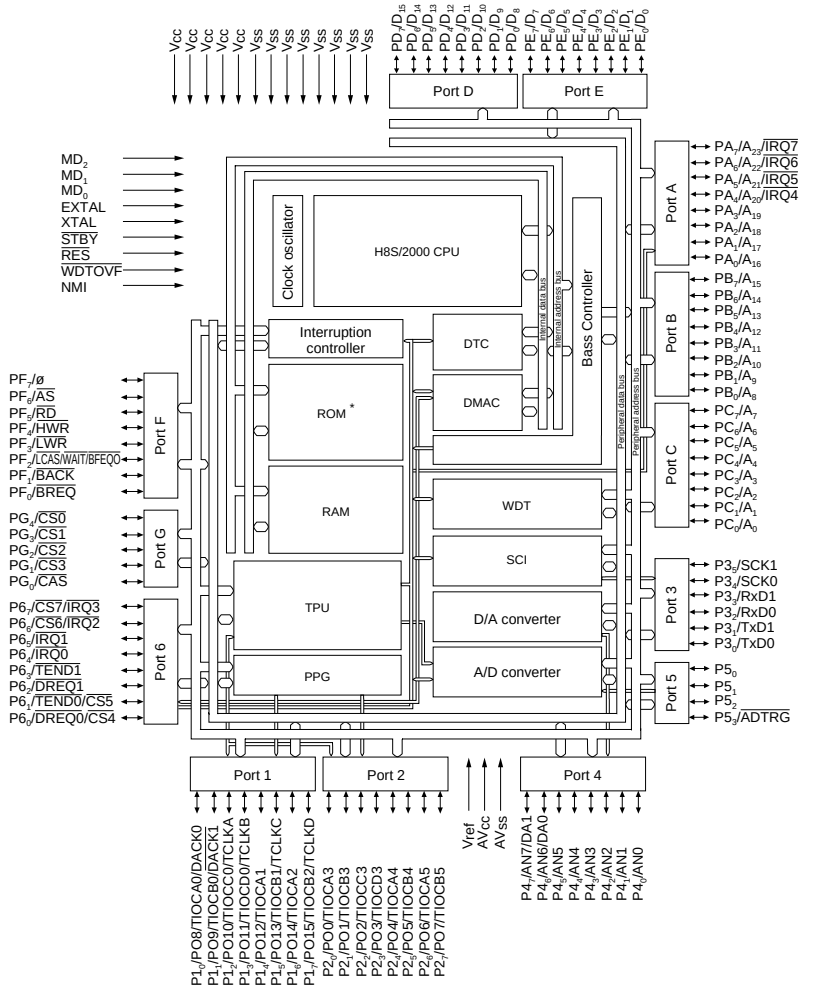
9-5. IC501 IX1697GE FLASH

Pin No.	Symbol	Type	Name and function
45	DQ_{15}/A_{-1}	Input	Byte selection address: When the device is in the x8 mode, the low or high order byte is selected. It is not used in the x16 mode. (If BYTE# is high, DQ_{15}/A_{-1} input circuit does not operate.)
25, 24~18, 8~4	A_0-A_{12}	Input	Word selection address: Selection of one word of 16k byte block. These addresses are latched during data wiring operation.
3~15, 48, 17	A_{13}-A_{17}	Input	Block selection address: Selection of 1/32 erase block. These addresses are latched during data writing, erasing and lock block operation.
29, 31, 33, 35, 38, 40, 42, 44	DQ_0-DQ_7	Input/Output	Low order byte data input/output: Command user interface writing cycle data and commandinput. Various data read memory identifier and status data output Chip nonselection or output disable: Float state
30, 32, 34, 36, 39, 41, 43, 45	DQ_8-DQ_{15}	Input/Output	High order byte data input/output: The function is the same as that of low order byte data input/output. Operative only in x16 mode. x8 mode: Float state DQ_{15}/A_{-1} is address.
26	CE#	Input	Chip enable: Device control logic, input buffer, decoder and sense amp. are activated. Chip becomes active only when CE# is “Low”.
12	RP#	Input	Reset/Power down: If RP# is set to “Low”, the control circuit is initialized when power is turned on. Hence, the RP#pin is set to “Low”. When power is turned on or off or in case of fluctuation it is kept at “Low” so as to protect data from noise. When RP# is in “Low” state, the device is in deep power down state. 480 ns is required to recover from the deep power down state. If the RP# pin becomes “Low”, the whole chip operation is interrupted and reset. After recovery the device is set to array read state.
28	OE#	Input	Output enable: When OE# is set to “Low”, data is output from the DQ pin. When OE# is set to “High”, the DQ pin is set to float state.
11	WE#	Input	Write enable: Command user interface, data Q register and address Q latch access is controlled. In “Low” state WE# becomes active. At rise edge the address and data are fetched.
15	RY/BY#	Output	Ready/busy: The state of internal write state machine is output. In “Low” state it is indicated that the write state machine is in operation. If the write state machine waits for next operation instruction, erase is suspended or it is in deep power down state, the RY/BY# pin is in float state.
47	BYTE#	Input	Byte enable: When BYTE# is set to “Low”, the device is set to the x8 mode. At this time the DQ_8-DQ_{15} pin becomes float state. Address A_{-1} selects high order/low order byte. When BYTE# is “High”, the device is set to the x16 mode. The A_{-1} input circuit is disabled.
13	Vpp		Write/erase power supply: 5.0 ± 0.5V is applied during writing/erasing.
37	Vcc		Device power supply: 5.0 ± 0.5V
27, 46	GND		Ground
9, 10, 14, 16	NC		Nonconnection

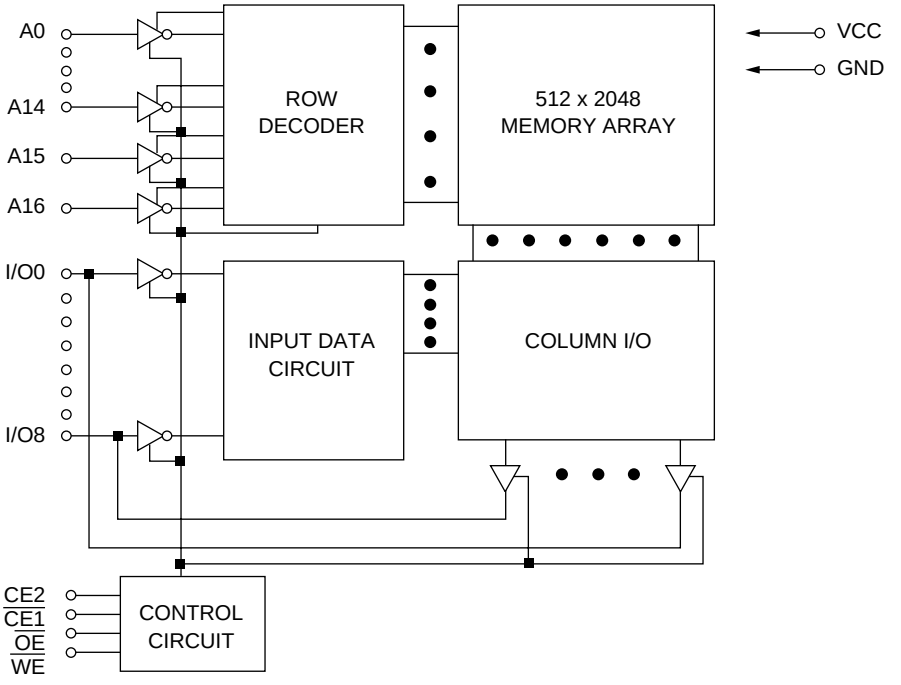
• Block Diagram



9-6. IC504 IX1478GE SYSCON



9-7. IC506 IX1618GE

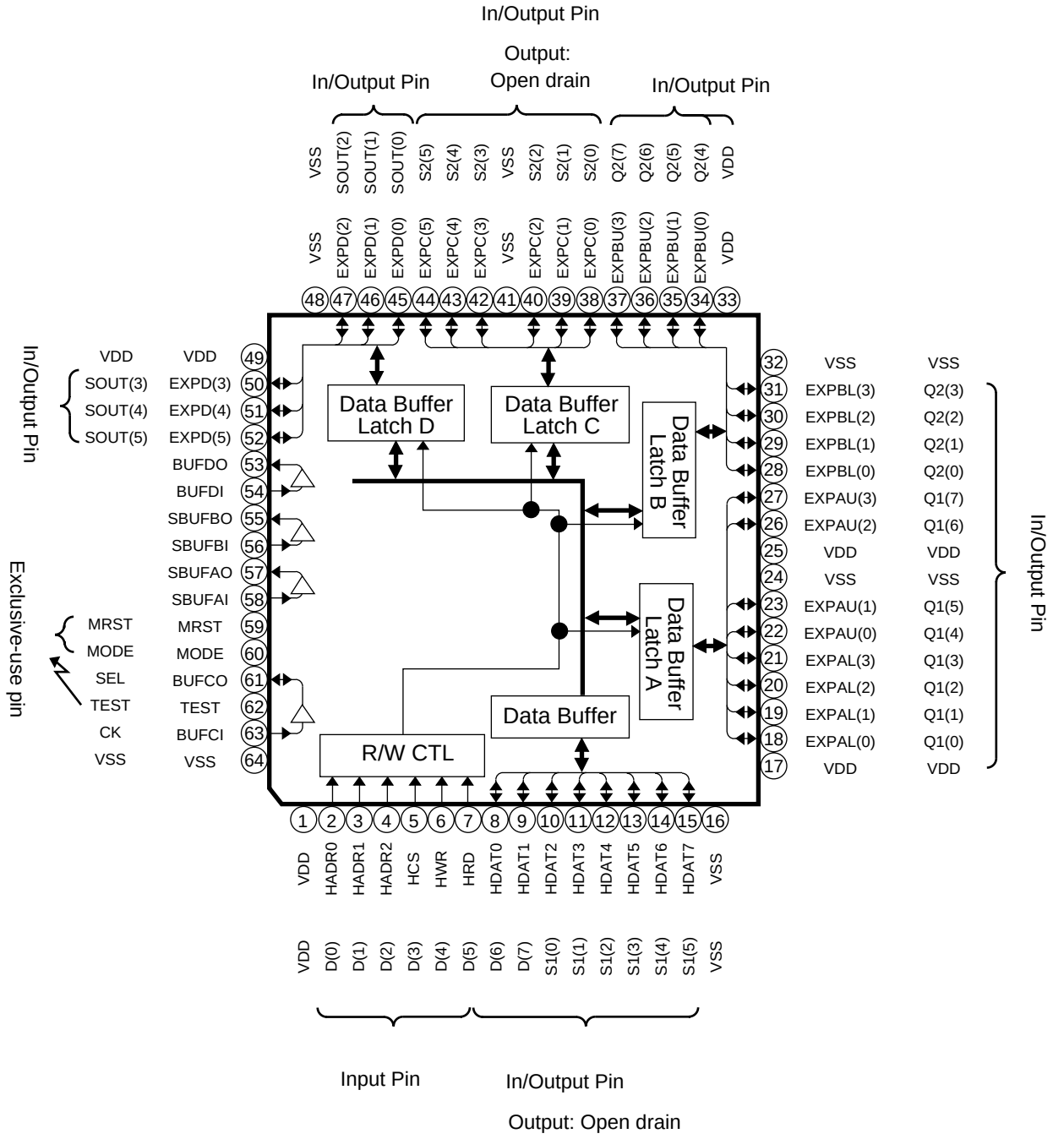


9-8. IC512 IX1535GE HOST I/F

Terminal	Terminal name	In/Output	Function
1	VDD	–	Power +3.3V
2	HADR0	Input	CPU Address bus
3	HADR1	Input	CPU Address bus
4	HADR2	Input	CPU Address bus
5	HCS	Input	CPU Tip select
6	HWR	Input	CPU Write signal
7	HRD	Input	CPU Read signal
8	HDAT0	In/Output	CPU Data bus
9	HDAT1	In/Output	CPU Data bus
10	HDAT2	In/Output	CPU Data bus
11	HDAT3	In/Output	CPU Data bus
12	HDAT4	In/Output	CPU Data bus
13	HDAT5	In/Output	CPU Data bus
14	HDAT6	In/Output	CPU Data bus
15	HDAT7	In/Output	CPU Data bus
16	VSS	–	Digital GND
17	VDD	–	Power +3.3V
18	EXPAL (0)	In/Output	General-use input/output terminal Gr.A
19	EXPAL (1)	In/Output	General-use input/output terminal Gr.A
20	EXPAL (2)	In/Output	General-use input/output terminal Gr.A
21	EXPAL (3)	In/Output	General-use input/output terminal Gr.A
22	EXPAU (0)	In/Output	General-use input/output terminal Gr.A
23	EXPAU (1)	In/Output	General-use input/output terminal Gr.A
24	VSS	–	Digital GND
25	VDD	–	Power +3.3V
26	EXPAU (2)	In/Output	General-use input/output terminal Gr.A
27	EXPAU (3)	In/Output	General-use input/output terminal Gr.A
28	EXPBL (0)	In/Output	General-use input/output terminal Gr.B
29	EXPBL (1)	In/Output	General-use input/output terminal Gr.B
30	EXPBL (2)	In/Output	General-use input/output terminal Gr.B
31	EXPBL (3)	In/Output	General-use input/output terminal Gr.B
32	VSS	–	Digital GND
33	VDD	–	Power +3.3V
34	EXPBU (0)	In/Output	General-use input/output terminal Gr.B
35	EXPBU (1)	In/Output	General-use input/output terminal Gr.B
36	EXPBU (2)	In/Output	General-use input/output terminal Gr.B
37	EXPBU (3)	In/Output	General-use input/output terminal Gr.B
38	EXPC (0)	In/Output	General-use input/output terminal Gr.C
39	EXPC (1)	In/Output	General-use input/output terminal Gr.C
40	EXPC (2)	In/Output	General-use input/output terminal Gr.C
41	VSS	–	Digital GND
42	EXPC (3)	In/Output	General-use input/output terminal Gr.C
43	EXPC (4)	In/Output	General-use input/output terminal Gr.C
44	EXPC (5)	In/Output	General-use input/output terminal Gr.C
45	EXPD (0)	In/Output	General-use input/output terminal Gr.D
46	EXPD (1)	In/Output	General-use input/output terminal Gr.D
47	EXPD (2)	In/Output	General-use input/output terminal Gr.D
48	VSS	–	Digital GND
49	VDD	–	Power +3.3V
50	EXPD (3)	In/Output	General-use input/output terminal Gr.D
51	EXPD (4)	In/Output	General-use input/output terminal Gr.D
52	EXPD (5)	In/Output	General-use input/output terminal Gr.D
53	BUFDO	Output	Buffer output D
54	BUFDI	Input	Buffer input D
55	SBUFBO	Output	Schmidt buffer output B
56	SBUFBI	Input	Schmidt buffer input B
57	SBUFAO	Output	Schmidt buffer output A
58	SBUFAI	Input	Schmidt buffer input A
59	MRST	Input	Reset terminal
60	MODE	Input	Mode selection terminal
61	BUFCO	In/Output	Buffer output C
62	TEST	Input	Test terminal (for Epson)
63	BUFCI	Input	Buffer input C
64	VSS	–	Digital GND

Pin1~15..... There is a possibility of simultaneous change. Operating frequency: Approx. 10 MHz
Pin18~47 ..... There is a possibility of simultaneous change.(Static signal) Operating frequency: Approx. 1 MHz
Pin50~57 ..... There is almost no possibility of simultaneous change. Operating frequency: Approx. 1 MHz
Pin63 ..... Not used

• Block Diagram


In/Output Pin
Output:
Open drain
In/Output Pin
In/Output Pin
VSS SOUT(2) SOUT(1) SOUT(0) S2(5) S2(4) S2(3) VSS S2(2) S2(1) S2(0) Q2(7) Q2(6) Q2(5) Q2(4) VDD
VSS EXPD(2) EXPD(1) EXPD(0) EXPC(5) EXPC(4) EXPC(3) VSS EXPC(2) EXPC(1) EXPC(0) EXPBU(3) EXPBU(2) EXPBU(1) EXPBU(0) VDD
48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
In/Output Pin
VDD VDD 49
SOUT(3) EXPD(3) 50
SOUT(4) EXPD(4) 51
SOUT(5) EXPD(5) 52
BUFDO 53
BUFDI 54
SBUFBO 55
SBUFBI 56
SBUFAO 57
SBUFAI 58
Exclusive-use pin
MRST MRST 59
MODE MODE 60
SEL BUFCO 61
TEST TEST 62
CK BUFCI 63
VSS VSS 64
Data Buffer Latch D
Data Buffer Latch C
Data Buffer Latch B
Data Buffer Latch A
Data Buffer
R/W CTL
32 VSS VSS
31 EXPBL(3) Q2(3)
30 EXPBL(2) Q2(2)
29 EXPBL(1) Q2(1)
28 EXPBL(0) Q2(0)
27 EXPAU(3) Q1(7)
26 EXPAU(2) Q1(6)
25 VDD VDD
24 VSS VSS
23 EXPAU(1) Q1(5)
22 EXPAU(0) Q1(4)
21 EXPAL(3) Q1(3)
20 EXPAL(2) Q1(2)
19 EXPAL(1) Q1(1)
18 EXPAL(0) Q1(0)
17 VDD VDD
In/Output Pin
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
VDD HADR0 HADR1 HADR2 HCS HWR HRD HDAT0 HDAT1 HDAT2 HDAT3 HDAT4 HDAT5 HDAT6 HDAT7 VSS
VDD D(0) D(1) D(2) D(3) D(4) D(5) D(6) D(7) S1(0) S1(1) S1(2) S1(3) S1(4) S1(5) VSS
Input Pin
In/Output Pin
Output: Open drain

9-9. IC601 IX1608GE

Pin No.	Pin name	Type	I/O	Function
Host interface, CD-DSP interface, subcode interface (32-pin)				
141	RESET#	I	I	Reset input (active low). When deassert is applied in the asserted state, the initializing process of MD36710X is started.
130	STNDBY#	I	I	Stand-by input (active low). When it is asserted together with RESET#, all output pins and bidirectional pins are floated to separate MD36710X electrically from the peripherals. The inner operation is wholly stopped to also minimize the power consumption. In the stand-by mode, the contents of SDRAM are not held.
142	IDLE	3-S	O	Idle, init or reset state display output (active high)
35	HWID	I	I	The data bus width of the host interface is determined. Only during reset, change is possible. For the low level (GND), the host interface of MD36710X is set to 8 bits but set to the 16-bit width for the high level (V_{DD}).
36	HORD	I	I	In the 16-bit width mode (HWIS is V_{DD}), the byte order of the data bus of the host interface is determined. It can be changed only during reset. MD36710X is set to input or output m.s. bytes at HD [15:8] for the low level (GND) and at HD [7:0] for the high level (V_{DD}). When HWID is at the GND level, it is connected to GND.
47	HTYPE	I	I	The protocol of the host bus is determined. It can be changed only during reset. MD36710X is set to the type A for the low level (GND) and to the type B for the high level (V_{DD}).
12, 14~21	HD[7:0]	3-S	I/O	8 l.s. of the host data bus. When HWID input is connected to GND, only the 8 l.s. signal is defined as the host data signal. When HWID is connected to V_{DD}, it is defined as the 8 l.s. line of 16-bit data bus.
7, 9~11	HD[11:8]	3-S	I/O	When HWID is connected to V_{DD}, it becomes the data line 11:8 of the 16-bit host data bus. When HWID is connected to GND, it becomes NC pin as specified below.
7	NC (HD[11])	O	O	For test (output)
9	NC (HD[10])	I	I	For test (input)
10	NC (HD[9])	I	I	For test (input)
11	NC (HD[8])	I	I	For test (input)
3~6	HD[15:12]	3-S	I/O	When HWID is connected to V_{DD}, it becomes the data line 15:12 of the 16-bit host data bus. When HWID is connected to GND, it becomes CD-DSP serial input port pin as specified below.
6	CDDAT (HD[12])	I	I	CD-DSP bit clock input
5	CDDAT (HD[13])	I	I	CD-DSP data input
4	CDFRM (HD[14])	I	I	CD-DSP LR clock (frame) input
3	CDERR (HD[15])	I	I	CD-DSP data error input
22, 24~26	HA[3:0]	I	I	Host address input. The address signal to specify the physical address in MD36710X is input.
29	HCS#	I	I	Host chip select input. Active low
27	HWR# (HR/W#)	I	I	Host protocol A type (HTYPE = GND): HR/W#. Input to determine the host access direction. Host protocol B type (HTYPE = VDD): HWR#. Host write input (active low).
30	HRD# (HDS#)	I	I	Host protocol A type (HTYPE = GND): HDS#. Data strobe input (active low). Host protocol B type (HTYPE = VDD): HRD#. Host read input (active low).
31	HRDY	3-S	O	Host ready output (active high). To transfer the stream via the host bus using this signal, use this signal. Moreover, the external pull-up resistor is necessary. It is possible to check that the transfer of CodBurstLen byte length is regarded as one packet and the signal is active before start of transfer of each packet and continuously write the bit stream up to CodBurstLen into MD36710X.
32	HIRQ#	3-S	O	Interrupt request (Active low). It is deasserted as the host leads the interrupt status register of MD36710X. Moreover, it is also deasserted after the host masks or resets the interrupt with the interrupt mask register of MD36710X. If HIRQ# is not asserted, it enters the 3-state state. (The external pull-up resistor is necessary.)
33	HACK#	3-S	O	Host acknowledge output (active low). For the protocol of type A, MD36710X asserts the output to inform the end of the read or write cycle. If the signal is not active, it enters the 3-state state. (The external pull-up resistor is necessary.) For the protocol of type B, it functions as the wait output signal. If the high-speed host (microcomputer) is used, it is sometimes unnecessary to connect the signal.

Pin No.	Pin name	Type	I/O	Function
GPI/O signal (4-pin)				
122,123	GPAI/O [1:0]	3-S	I/O	General purpose bidirectional pin for monitor and control with ADP microcode. After resetting, this pin is defined as the input. If ADP command is used, setting is possible.
2	GPSI	I	I	General purpose input for monitor with DVP microcode.
159	GPSO	O	O	General purpose output for control with DVP microcode.
PLL signal (6-pin)				
129	GCLK	I	I	27,000MHz clock or crystal input for main processor
126	GCLK1	I	I	27,000MHz master clock input for audio. It must be connected to GCLK during ordinary operation.
128	XO	O	O	Output to crystal connected to GCLK. If crystal is not used in GCLK, XO is not connected.
136	PLLCA			Capacitor connection pin for PLL. Connect 47nF capacitor. Connect the other terminal of the capacitor to PLLGND.
137,135	PLLCFG [1:0]	I	I	PLL configuration input. Change is possible during reset only. In the normal use, both pins must be connected to (digital) GND.
Digital video port (24-pin)				
92, 94~97, 99~101	Y [7:0]	3-S	O	In the 16-bit video mode (Video8 = 0), the line becomes the luminance output. In the 8-bit mode (Video8 = 1), it becomes the luminance/color difference output which is timely multiple-processed according to ITU-R656 standard (regardless whether SAV, EAV sync code is present or not).
102, 104~107, 109~111	C [7:0] OSDPEL[3:0] (C[3:0]) OSDPLT (C[4])	3-S	I/O	In the 16-bit video mode (Video8 = 0), the line becomes the color difference output. In the 8-bit mode (Video8 = 1), the pin 3 (C[7:5]) of m.s. line is not used, and 1.s.5 pin (C[4:0]) is specified as the input which is received from the external OSD device. OSD pixel input. The four signals are used as the entry to on-chip OSD pallet. On-chip OSD pallet selector. OSDPallete0 is selected for the low level, and OSDpallete1 is selected for the high level.
124	VCLKX2	3-S	I/O	Main video clock input or output. 27,000MHz
84	VCLK	3-S	I/O	VCLKx2 signal is divided into two parts. The signal is used as the qualifier of the data and sync signal.
90	HSYNC	3-S	I/O	Horizontally sync bidirection signal pin. The polarity and length are programmable.
89	VSYNC	3-S	I/O	Vertically sync bidirectional signal pin. The polarity and length are programmable.
91	FI	3-S	I/O	Field identification bidirectional signal pin. The polarity is programmable.
88	CBLANK	O	O	Composite blank output. The waveform including the polarity is programmable.
85	VMASTER	I	I	Video master/slave selection input. For the high level, the video synchronization of MD36710X goes into the master mode. (Accordingly, the video SYNC signal and clock are output.) For the low level, the video synchronization goes into the slave mode. (Accordingly, the video SYNC signal and clock are input.) Only in the reset mode, the setting of the terminal can be changed.
87	VDEN#	I	I	Video enable input (active low). When it is active, MD36710X outputs the video data. When it is deasserted, the pixel output goes into the 3-state. (However, the sync signal and clock are kept to be active.) Though this input can be changed at any time, it is valid at the following VCKx2 time.
Digital audio port (8-pin)				
132	AMCLK	3-S	O	Audio master clock input/output. The sampling frequencies of 384fs, 256fs, 192fs and 128fs can be selected (programmable).
117	S/PDIF(AOUT[3])	O	O	S/DDIF transmitter output. Moreover, it can be connected to DAC as the 4th audio output (AOUT[3]). After resetting, the pin outputs the low level.
116~114	AOUT [2:0]	O	O	Serial output of PCM stereo audio for DAC. After resetting, the pin outputs the low level. Only for AOUT[0], the sample width of 24 bits is supported.
112	AIN	I	I	Serial input of PCM stereo audio for ADC.
118	ALRCLK	O	O	LR clock output of AOUT[3.0] and ATN. For the sampling frequency, it is a rectangular wave. The polarity of LR is programmable.
119	ABCLK	O	O	Bit clock output of AOUT[3.0] and AIN. AOUT is output at the rise/fall edges of the clock (programmable), and AIN is latched.

Pin No.	Pin name	Type	I/O	Function
DVD-DSP interface (13-pin)				
148	DVDREQ	O	O	DVD-DSP data request output (polarity programmable)
146	DVDVALID	I	I	DVD-DSP data valid input (polarity programmable)
144	DVDSOS	I	I	DVD-DSP data selector start input (polarity programmable)
*1	DVDDAT [7:0]	I	I	DVD-DSP data input bus
147	DVDSTRB	I	I	DVD-DSP data bit strobe (clock) input. Polarity programmable.
143	DVDERR	I	I	DVD-DSP error input. Polarity programmable.
SDRAM interface (35-pin)				
*2	RAMDAT [15:0]	3-S	I/O	SDRAM bidirectional data bus
*3	RAMADD [11:0]	O	O	SDRAM address bus output
56	RAMRAS#	O	O	SDRAM row selection (active low) output
59	RAMCAS#	O	O	SDRAM column selection (active low) output
57	PCLK	O	O	SDRAM clock output (similar to the inner process clock)
61	RAMDQM	O	O	SDRAM data masking (active high) output
54	RAMCS0#	O	O	SDRAM chip select (active low) output. For lower order of 2Mbyte device.
55	RAMCS1#	O	O	SDRAM chip select (active low) output. For higher order of 2Mbyte device.
60	RAMWE#	O	O	SDRAM write enable (active low) output.
TEST signal (3-pin)				
127	SCNENBL	I	I	Test pin. Usually connected to GNG.
83	TESTMODE	I	I	Test pin. Usually connected to VDD.
139	ICEMODE	I	I	Test pin. Usually connected to VDD.
Power signal (35-pin)				
*4	GND	ground		Digital GND
*5	VDD	power		Digital power supply (3.3V)
134	PLLGND (GNDA)	ground		GND of inner PLL circuit
138	PLLVDD (VDDA)	power		Power supply of inner PLL circuit (3.3V)

*1 158~156, 154~151, 149

*2 79, 77, 75, 72, 70, 67, 65, 62, 64, 66, 69, 71, 74, 76, 78, 82

*3 52, 50, 51, 49, 46, 44, 42, 38, 39, 43, 45, 47

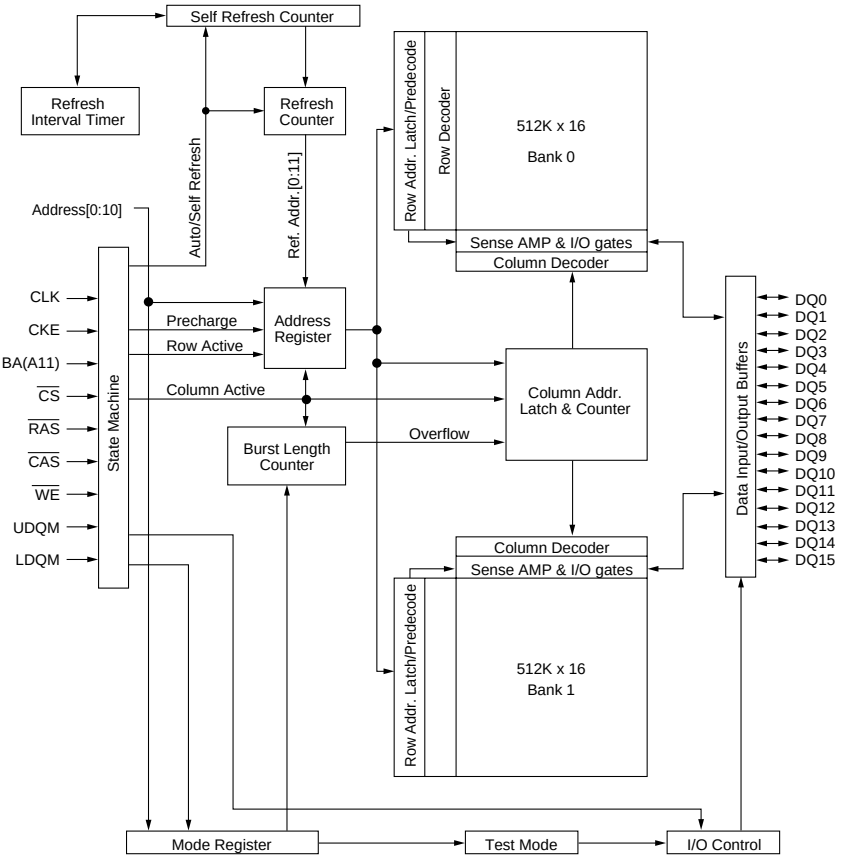
*4 1, 13, 23, 40, 41, 53, 68, 80, 81, 108, 120, 121, 125, 131, 145, 160

*5 8, 18, 28, 33, 48, 58, 63, 73, 103, 113, 133, 140, 150, 155

9-10. IC602 IX0750TA

Terminal	Terminal Name	Name	Input Function
35	CLK	System Clock	Active on the positive going edge to sample all inputs.
18	$\overline{CS}$	Chip Select	Disables or enables device operation by masking or enabling all inputs except CLK. CKE and L(U)DQM
34	CKE	Clock Enable	Masks system clock to freeze operation from the next clock cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in stanby.
21~24 27~32 20	A0~A10/AP	Address	Row/column address are multiplexed on the same pins. Row address: RA0~RA10, column address: CA0~CA7
19	BA	Bank Select Address	Selects bank to be activated during row address latch time. Selects bank for read/write during clumn address latch time.
17	$\overline{RAS}$	Row Address Strobe	Latches row address on the positive going edge of the CLK with RAS low. Enables row access & precharge.
16	$\overline{CAS}$	Column Address Strobe	Latches addresses on the positive going edge of the CLK with CAS low. Enables row access.
15	$\overline{WE}$	Write Enable	Enable write operation and row precharge. Latches data in starting from CAS, WE active.
14, 36	DOML(U)	Data Input/Output Mask	Makes data output Hi-Z, tsHZ after the clock and masks the output. Blocks data input when L(U)DQM active.
2, 3, 5, 6, 8, 9, 11, 12, 39, 40, 42, 43, 45, 46, 48, 49	DQ0~15	Data Input/Output	Data inputs/outputs are multiplexed on the same pins.
25, 1/26, 50	Vcc/Vss	Power Supply/Ground	Power and ground for the input buffers and the core logic.
44, 38, 13, 7/4, 10, 41, 47	Vcc/VssO	Data Output Power/Ground	Isolated power supply and ground for the output buffers to provide improved noise immunity.
33, 37	NC/RFU	No Connection/ Reserved for Future Use	This pin is recommanded to be left No Connection on the device

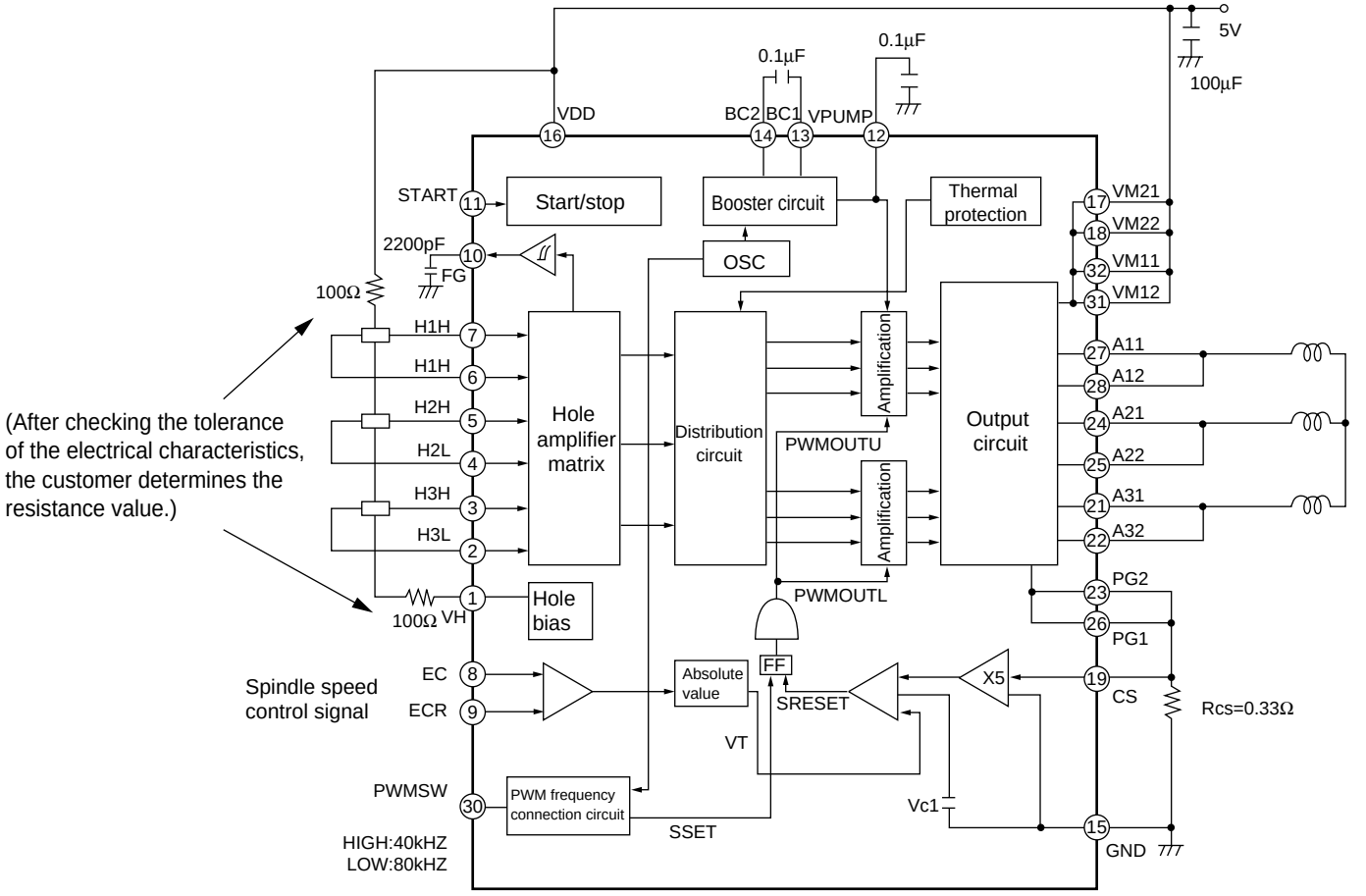
• Block Diagram



9-11. IC701 AN8473NS-1

Pin No.	Terminal name	Operation function	Pin No.	Terminal name	Operation function
1	VH	Hole bias terminal	17	VM21	Motor power terminal 2
2	H3L	Hole element 3 negative input terminal	18	VM22	Motor power terminal 2
3	H3H	Hole element 3 positive input terminal	19	CS	Current detection terminal
4	H2L	Hole element 2 negative input terminal	20	NC	N. C.
5	H2H	Hole element 2 positive input terminal	21	A31	Drive output 3
6	H1L	Hole element 1 negative input terminal	22	A32	Drive output 3
7	H1H	Hole element 1 positive input terminal	23	PG2	Power current detection terminal 2
8	EC	Torque command input terminal	24	A21	Drive output 2
9	ECR	Torque command reference input terminal	25	A22	Drive output 2
10	FG	FG signal output terminal	26	PG1	Power current detection terminal 1
11	START	Start/stop selection terminal	27	A11	Drive output 1
12	VPUMP	Booster terminal	28	A12	Drive output 1
13	BC1	Booster capacitor connection terminal	29	NC	N. C.
14	BC2	Booster capacitor connection terminal	30	PWMSW	PWM frequency selection terminal
15	GND	GND terminal	31	VM12	Motor power terminal 1
16	VDD	Power terminal	32	VM11	Motor power terminal 1

• Block Diagram

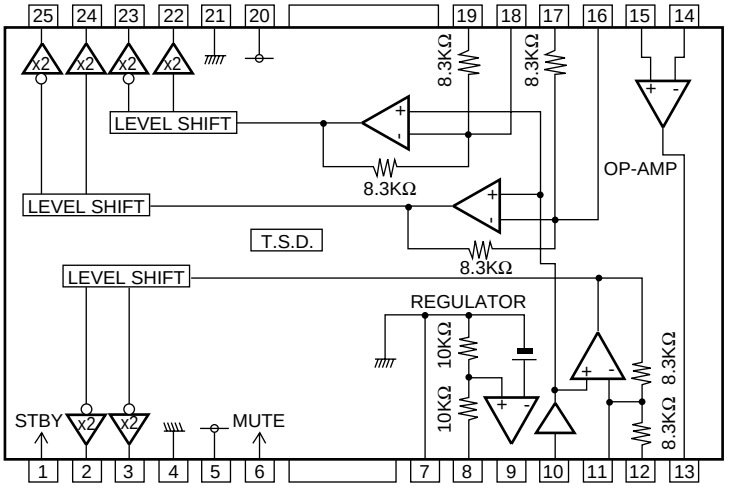


9-12. IC702 BA5933FP-1

Pin No.	Terminal name	Operation function	Pin No.	Terminal name	Operation function
1	STBY	Stand-by mode selector switch	13	OP_OUT	Operation amplifier output
2	OUT+	CH1 positive output terminal	14	OP_IN(-)	Operation amplifier negative input
3	OUT-	CH1 negative output terminal	15	OP_IN(+)	Operation amplifier positive input
4	GND	GND	16	IN2'	CH2 gain adjustment input terminal
5	VCC	VCC	17	IN2	CH2 gain fixed input terminal
6	MUTE	Mute terminal	18	IN3'	CH3 gain adjustment input terminal
7	GND	Substrate GND	19	IN3	CH3 gain fixed input terminal
8	REG_OUT	Constant voltage output (collector of external Tr)	20	VCC	VCC
			21	GND	GND
9	REG_B	Connected to the base of external Tr	22	OUT3-	CH3 negative output terminal
10	BIAS	Bias input terminal	23	OUT3+	CH3 positive output terminal
11	IN1'	CH1 gain adjustment input terminal	24	OUT2-	CH2 negative output terminal
12	IN1	CH1 gain fixed input terminal	25	OUT2+	CH2 positive output terminal

* The negative/positive pole of the output terminal is the polarity against the input.

• Block Diagram



T.S.D ; Thermal shutdown
Unit of resistance is [Ω].

9-13. IC707 IX1473GE SERVO PROCCESSOR

<table>
<tr><th>Pin No.</th><th>Terminal name</th><th>I/O</th><th>Operation function</th><th>Remarks</th></tr>
<tr><td>1</td><td>VSS</td><td>–</td><td>Digital ground terminal.</td><td></td></tr>
<tr><td>2</td><td>BCK</td><td>O</td><td>Bit clock (1.4122MHz) output terminal.</td><td></td></tr>
<tr><td>3</td><td>AOUT</td><td>O</td><td>Audio data output terminal.</td><td></td></tr>
<tr><td>4</td><td>DOUT</td><td>O</td><td>Digital out output terminal.</td><td></td></tr>
<tr><td>5</td><td>MBOB</td><td>O</td><td>Buffer memory over signal output terminal. Over: “H”</td><td></td></tr>
<tr><td>6</td><td>IPF</td><td>O</td><td>Correction flag output terminal. When correction disable symbol is given if AOUT output is C2 correction: “H”.</td><td></td></tr>
<tr><td>7</td><td>SBOK</td><td>O</td><td>Sub-code Q data CRCC judgment result output terminal.
Judgment result OK: “H”.</td><td></td></tr>
<tr><td>8</td><td>CLCK</td><td>I/O</td><td>Sub-code P to W data read clock output/input terminal.
Selectable with command bit.</td><td></td></tr>
<tr><td>9</td><td>VDD</td><td>–</td><td>Digital + power terminal</td><td></td></tr>
<tr><td>10</td><td>VSS</td><td>–</td><td>Digital ground terminal</td><td></td></tr>
<tr><td>11</td><td>DATA</td><td>O</td><td>Sub code P-W data output terminal.</td><td></td></tr>
<tr><td>12</td><td>SFSY</td><td>O</td><td>Playback system frame sync signal output terminal.</td><td></td></tr>
<tr><td>13</td><td>SBSY</td><td>O</td><td>Subcode block sync output terminal.
When subcode sync is detected, S1 position: “H”.</td><td></td></tr>
<tr><td>14</td><td>SPCK</td><td>O</td><td>Processor status signal read clock (176.4 kHz) output terminal.</td><td></td></tr>
<tr><td>15</td><td>SPDA</td><td>O</td><td>Processor status signal output terminal.</td><td></td></tr>
<tr><td>16</td><td>COFS</td><td>O</td><td>Correction system frame clock (7.35 kHz) output terminal.</td><td></td></tr>
<tr><td>17</td><td>MONIT</td><td>O</td><td>LSI internal signal monitor terminal.
DSP internal flag and PLL system clock can be monitored with microcomputer command.</td><td></td></tr>
<tr><td>18</td><td>VDD</td><td>–</td><td>Digital + power terminal.</td><td></td></tr>
<tr><td>19</td><td>TESIO0</td><td>I</td><td>Test input/output terminal. Usually fixed to “L”.</td><td></td></tr>
<tr><td>20</td><td>P2VREF</td><td>–</td><td>PLL system 2VREF terminal.</td><td></td></tr>
<tr><td>21</td><td>SPDO</td><td>O</td><td>VCO center frequency shift terminal.</td><td></td></tr>
<tr><td>22</td><td>PDOS</td><td>O</td><td>EFM and PLCK signal phase error signal output terminal.
(To be used when x8 speed operation is used)</td><td></td></tr>
<tr><td>23</td><td>PDO</td><td>O</td><td>EFM and PLCK signal phase error signal output terminal.</td><td></td></tr>
<tr><td>24</td><td>XMAXS</td><td>O</td><td rowspan="2">TMAX detection result output terminal.
To be selected with command bit TMPS.
<table><tr><th>TMAX detection result</th><th>TMAXoutput</th></tr><tr><td>Longer than specific period</td><td>“P2VREFF”</td></tr><tr><td>Shorter than specific period</td><td>“VSS”</td></tr><tr><td>Within specified period</td><td>“HiZ”</td></tr></table></td><td rowspan="2"></td></tr>
<tr><td>25</td><td>TMAX</td><td>O</td></tr>
<tr><td>26</td><td>LPFN</td><td>I</td><td>Reverse input terminal for low pass filter amplifier.</td><td></td></tr>
<tr><td>27</td><td>LPFO</td><td>O</td><td>Output terminal for low pass filter amplifier.</td><td></td></tr>
<tr><td>28</td><td>PVREF</td><td>–</td><td>PLL system VREF terminal.</td><td></td></tr>
<tr><td>29</td><td>VCOREF</td><td>I</td><td>VCO center frequency reference level terminal.
To be fixed usually to “PVREF”.</td><td></td></tr>
<tr><td>30</td><td>VCOF</td><td>O</td><td>Filter terminal for VCO.</td><td></td></tr>
<tr><td>31</td><td>AVSS</td><td>–</td><td>Analog system ground terminal.</td><td></td></tr>
<tr><td>32</td><td>SLCO</td><td>O</td><td>Data slice level generation DAC output terminal.</td><td></td></tr>
<tr><td>33</td><td>RFIN</td><td>I</td><td>RF signal input terminal.</td><td></td></tr>
<tr><td>34</td><td>AVDD</td><td>–</td><td>Analog system power terminal.</td><td></td></tr>
<tr><td>35</td><td>RFCT</td><td>I</td><td>RFRP signal center level input terminal.</td><td></td></tr>
<tr><td>36</td><td>RFZI</td><td>I</td><td>RFRP zero cross input terminal.</td><td></td></tr>
<tr><td>37</td><td>RFRP</td><td>I</td><td>RF ripple signal input terminal.</td><td></td></tr>
<tr><td>38</td><td>FEIN</td><td>I</td><td>Focus error signal input terminal.</td><td></td></tr>
<tr><td>39</td><td>SBAD</td><td>I</td><td>Sub-beam addition signal input terminal.</td><td></td></tr>
<tr><td>40</td><td>TSIN</td><td>I</td><td>Test input terminal. To be fixed usually to “Vref”</td><td></td></tr>
<tr><td>41</td><td>TEIN</td><td>I</td><td>Tracking error signal input terminal.
(Fetching when tracking servo is ON)</td><td></td></tr>
<tr><td>42</td><td>TEZI</td><td>I</td><td>Tracking error zero cross input terminal.</td><td></td></tr>
<tr><td>43</td><td>FOO</td><td>O</td><td>Focus equalizer output terminal.</td><td></td></tr>
</table>

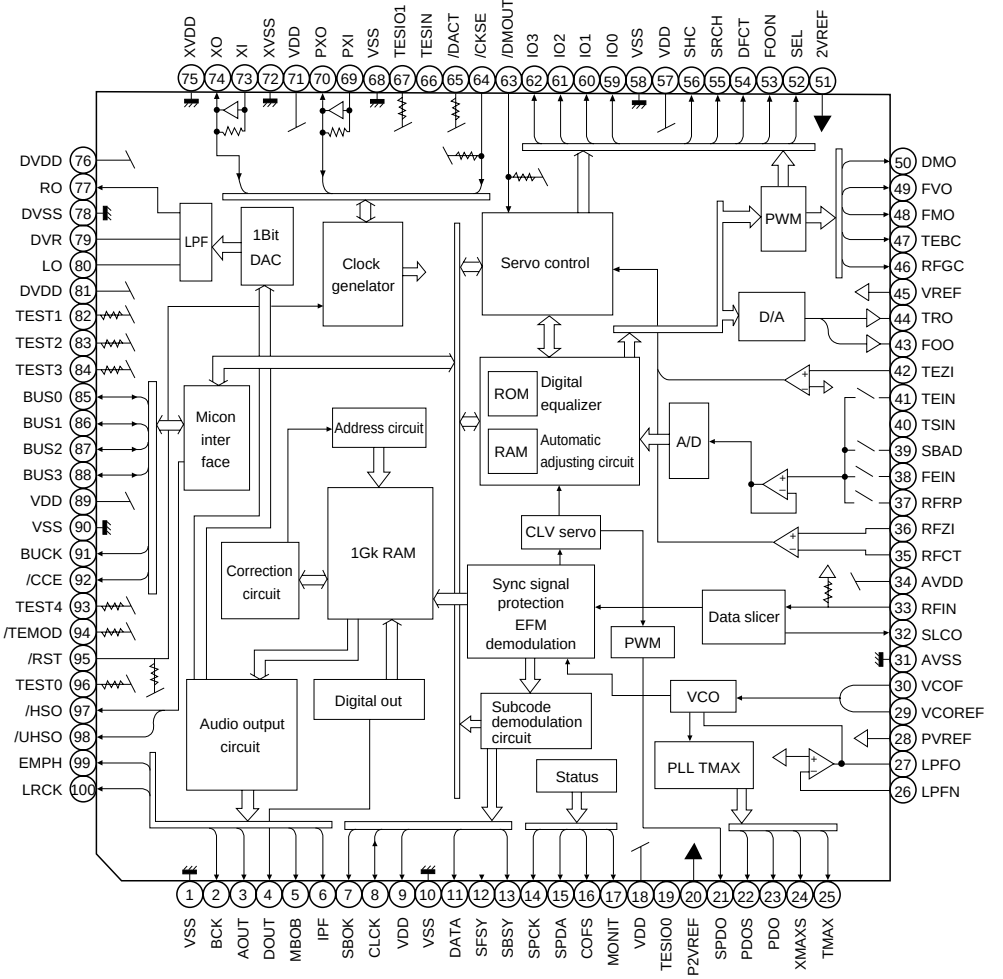
Pin No.	Terminal name	I/O	Operation function	Remarks
44	TRO	O	Tracking equalizer output terminal.	
45	VREF	–	Analog reference power terminal.	
46	RFGC	O	RF amplitude adjustment control signal output terminal. Output of 3-pole PWM signal. (PWM carrier = 88.2 kHz)	
47	TEBC	O	Tracking balance control signal output terminal. Output of 3-pole PWM signal. (PWM carrier = 88.2 kHz)	
48	FMO	O	Feed equalizer output terminal. Output of 3-pole PWM signal. (PWM carrier = 88.2 kHz)	
49	FVO	O	Speed error signal or feed search EQ output terminal. Output of 3-pole PWM signal. (PWM carrier = 88.2 kHz)	
50	DMO	O	Disc equalizer output terminal. Output of 3-pole PWM signal. (PWM carrier = DSP system 88.2kHz, to be synchronized with PXO)	
51	2VREF	–		
52	SEL	O		
53	FOON	O		
54	DFCT	O		
55	SRCH	O		
56	SHC	O		
57	VDD	–		
58	VSS	–		
59	IO0	I/O	General use I/O port. It is possible to select the input port and output port according to command. In case of input port the terminal state (H/L) can be read with the read command. In case of output port the terminal state (H/L/HiZ) can be controlled with the command.	
60	IO1			
61	IO2			
62	IO3			
63	/DMOUT		Terminal to set the mode to output dual value PWM of feed equalizer from the IO0,1 terminal and to output the dual value PWM from disc equalizer of IO2,3 terminal “L” Active.	
64	/CKSE		X’tal selection terminal. When 16.9344 MHz: “H” When 33.8688 MHz: “L”	
65	/DACT		Test terminal.	
66	TESIN		Test input terminal.	
67	TESIO1		Test input/output terminal.	
68	VSS		Digital ground terminal.	
69	PXI		DSP system clock oscillation circuit input terminal.	
70	PXO		DSP system clock oscillation circuit output terminal.	
71	VDD		Digital + power terminal.	
72	XVSS		Ground terminal for system clock oscillation circuit.	
73	XI		System clock oscillation circuit input terminal.	
74	XO		System clock oscillation circuit output terminal.	
75	XVDD		Positive power terminal for system clock oscillation circuit.	
76	DVDD	–	D/A converting section power terminal.	
77	RO	O	R channel data forward rotation output terminal.	
78	DVSS	–	D/A converting section analog ground terminal.	
79	DVR	–	D/A converting section reference voltage terminal.	
80	LO	O	L channel data forward rotation output terminal.	
81	DVDD	–	D/A converting section power terminal.	
82	TEST1	I	Test terminal. To be opened usually.	Pull-up resistor built in.
83	TEST2	I	Test terminal. To be opened usually.	Pull-up resistor built in.
84	TEST3	I	Test terminal. To be opened usually.	Pull-up resistor built in.
85	BUS0	I/O	Microcomputer interface data input/output terminal.	Schmidt input CMOS port
86	BUS1	I/O		
87	BUS2	I/O		

Pin No.	Terminal name	I/O	Operation function	Remarks
88	BUS3	I/O		
89	VDD	–	Digital + power terminal.	
90	VSS	–	Digital ground terminal.	
91	BUCK	I	Microcomputer interface clock input terminal.	Schmidt input
92	/CCE	I	Microcomputer interface chip enable signal input terminal. BUS0 to 3 is active in “L” state.	Schmidt input
93	TEST4	I	Test terminal. To be opened usually.	Pull-up resistor built in.
94	/TEMOD	I	Local test mode selection terminal.	Pull-up resistor built in.
95	/RST	I	Reset signal input terminal. Reset state: “L”	Pull-up resistor built in.
96	TEST0	I	Test terminal. To be opened usually.	Pull-up resistor built in.
97	/HSO	O	Playback speed mode flag output terminal.	
98	/UHSO	O		

/UHSO	/HSO	Playback speed
H	H	x1 speed playback
H	L	x2 speed playback
L	H	x4 speed playback
L	L	x8 speed playback

99	EMPH	O	Subcode Q data emphasis flag output terminal. Emphasis ON: “H” OFF: “L” Output polarity can be inverted by the command.	
100	LRCK	O	Channel clock (44.1 kHz) output terminal. L channel “L” R channel: “H” Output polarity can be inverted by the command.	

• Block Diagram

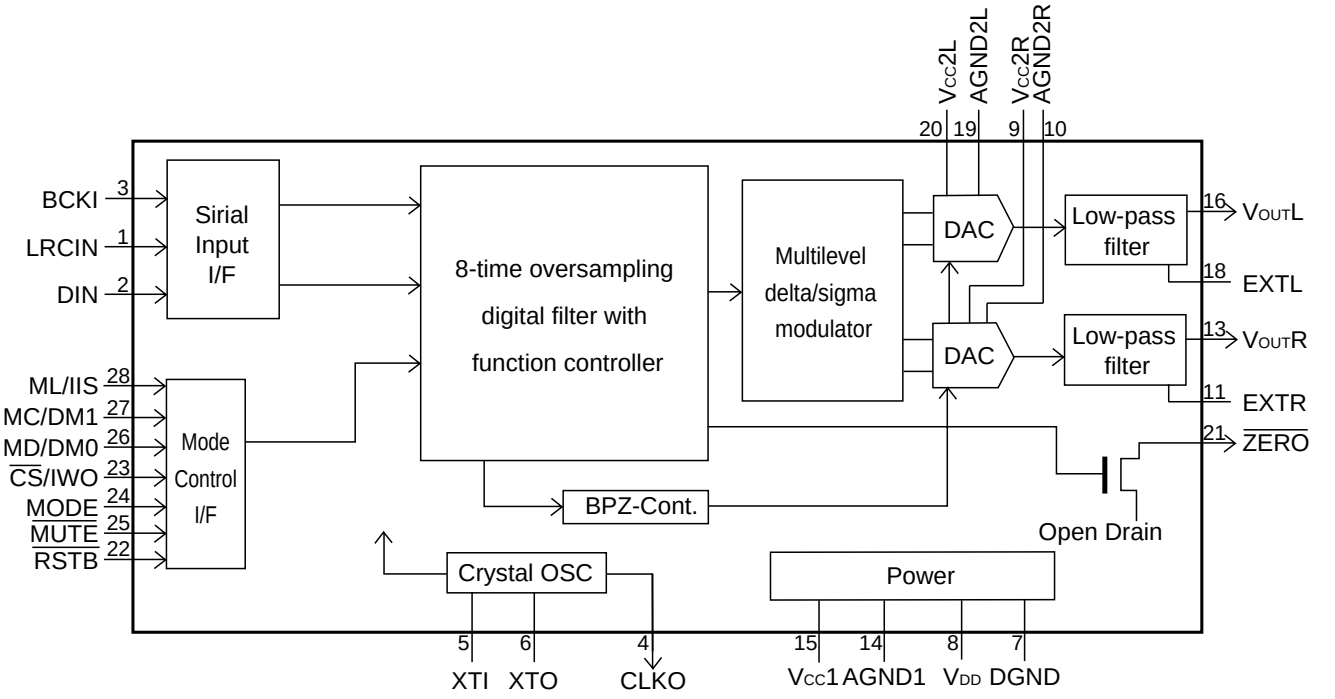


9-14. IC801 PCM1716E AUDIO D/A CONVERTER

Pin No.	Terminal name	I/O	Operation function
1	LRCIN	I	LRCK clock input (fs) (3)
2	DIN	I	Data input (3)
3	BCKI	I	Bit clock input for data.
4	CLKO	O	System clock buffered output.
5	XTI	I	Connection of crystal oscillator or external clock input.
6	XTO	O	Connection of crystal oscillator
7	DGND	–	Digital GND
8	V_{DD}	–	Digital power +5V
9	V_{CC}2R	–	Analog power +5V
10	AGND2R	–	Analog GND
11	EXTR	O	Rch Analog output amp. • common
12	NC	–	Not connected.
13	V_{OUT}R	O	Rch Analog voltage output
14	AGND1	–	Analog GND
15	V_{CC}1	–	Analog power +5V
16	V_{OUT}L	O	Lch Analog voltage output
17	NC	–	Not connected.
18	EXTL	O	Lch Analog output amp. • common
19	AGND2L	–	Analog GND
20	V_{CC}2L	–	Analog power +5V
21	$\overline{ZERO}$	O	Zero data • flug
22	$\overline{RSTB}$	I	Resetting. While this pin is in "L" state, the DF and delta -sigma modulator is in reset state. (1)
23	$\overline{CS}$/IWO	I	Chip selection/input format selection (2)
24	MODE	I	Mode control selection (H: Software, L: Hardware) (1)
25	$\overline{MUTE}$	I	Mute control (1)
26	MD/DM0	I	Mode control data/deemphasis selection 1 (1)
27	MC/DM1	I	Mode control BCK/deemphasis selection 2 (2)
28	ML/IIS	I	Mode control latch/input format selection (1)

Note: (1) Pins 22, 24, 25, 26, 27, and 28: With Schmidt trigger input pull-up resistor (2) Pin 23: With Schmidt trigger input pull-down resistor
(3) Pins 1, 2, and 3: Schmidt trigger input

• Block Diagram

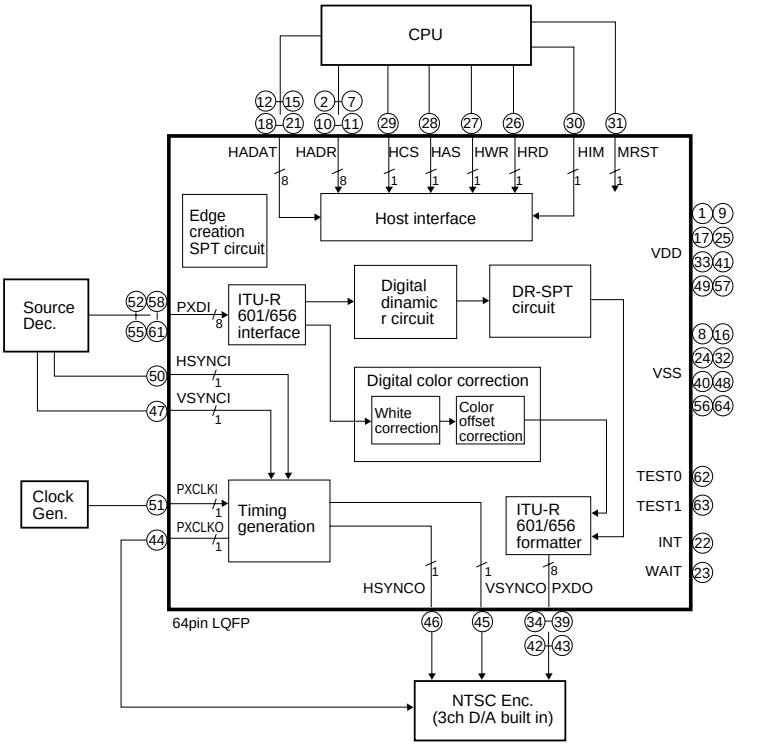


9-15. IC901 IX1516GE GAMMA S-P-TONE

Terminal	Terminal name	In/Output	Function
1	VDD	–	Digitan power +3.3V
2	HADR (0)	Input	CPU Address bus
3	HADR (1)	Input	CPU Address bus
4	HADR (2)	Input	CPU Address bus
5	HADR (3)	Input	CPU Address bus
6	HADR (4)	Input	CPU Address bus
7	HADR (5)	Input	CPU Address bus
8	VSS	–	Digital GND
9	VDD	–	Digitan power +3.3V
10	HADR (6)	Input	CPU Address bus
11	HADR (7)	Input	CPU Address bus
12	HADAT (0)	Input	CPU Data bus
13	HADAT (1)	Input	CPU Data bus
14	HADAT (2)	Input	CPU Data bus
15	HADAT (3)	Input	CPU Data bus
16	VSS	–	Digital GND
17	VDD	–	Digitan power +3.3V
18	HADAT (4)	Input	CPU Data bus
19	HADAT (5)	Input	CPU Data bus
20	HADAT (6)	Input	CPU Data bus
21	HADAT (7)	Input	CPU Data bus
22	INT	Input	CPU Data bus
23	WAIT	Input	CPU Data bus
24	VSS	–	Digital GND
25	VDD	–	Digitan power +3.3V
26	HRD	Input	CPU read signal
27	HWR	Input	CPU write signal
28	HAS	Input	CPU address strobe signal
29	HCS	Input	CPU tip select signal
30	HIM	Input	CPU bus control selection signal (I/M mode = H/L)
31	MRST	Input	Reset signal
32	VSS	–	Digital GND
33	VDD	–	Digital power +3.3V
34	PXDO (0)	Output	Pixel data output
35	PXDO (1)	Output	8-bit parallel video data conforming to ITU-R BT.601 and BT.656 standard (Cb/Y/Cr/Y)
36	PXDO (2)	Output	MSB=PXDO(7), LSB=PXDO(0)
37	PXDO (3)	Output	
38	PXDO (4)	Output	
39	PXDO (5)	Output	
40	VSS	–	Digital GND
41	VDD	–	Digital power +3.3V
42	PXDO (6)	Output	
43	PXDO (7)	Output	
44	PXCLKO	Output	Reference clock output for pixel data. 27 MHz
45	VSYNCO	Output	Vertical sync signal output
46	HSYNCO	Output	Horizontal sync signal output
47	VSYNCI	Input	Vertical sync signal output
48	VSS	–	Digital GND
49	VDD	–	Digital power +3.3V
50	HSYNCI	Input	Horizontal sync signal output
51	PXCLKI	Input	Reference clock output for pixel data. 27 MHz
52	PXDI (0)	Input	Pixel data output
53	PXDI (1)	Input	8-bit parallel video data conforming to ITU-R BT.601 and BT.656 standard (Cb/Y/Cr/Y)
54	PXDI (2)	Input	MSB=PXDI(7), LSB=PXDI(0)
55	PXDI (3)	Input	

Terminal	Terminal name	In/Output	Function
56	VSS	–	Digital GND
57	VDD	–	Digital power +3.3V
58 59 60 61	PXDI (4) PXDI (5) PXDI (6) PXDI (7)	Input Input Input Input	
62	TEST0	Input	Test terminal
63	TEST1	Input	Test terminal
64	VSS	–	Digital GND

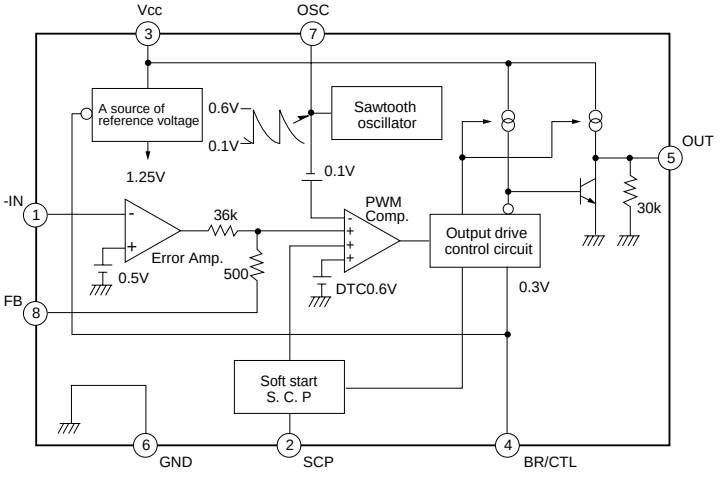
• Block Diagram



9-16. IC1000 MB3800PV

Pin No.	Terminal name	I/O	Operation function
1	-IN	I	Error amplifier inversion input terminal
2	SCP	–	Capacitor connection terminal for soft start/SCP setting
3	VCC	–	Power terminal
4	BR/CTL	I	Output current setting/control terminal
5	OUT	O	Totem pole type output terminal
6	GND	–	Ground terminal
7	OSC	–	Capacitor/resistor connection terminal for oscillation frequency setting
8	FB	O	Error amplifier output terminal

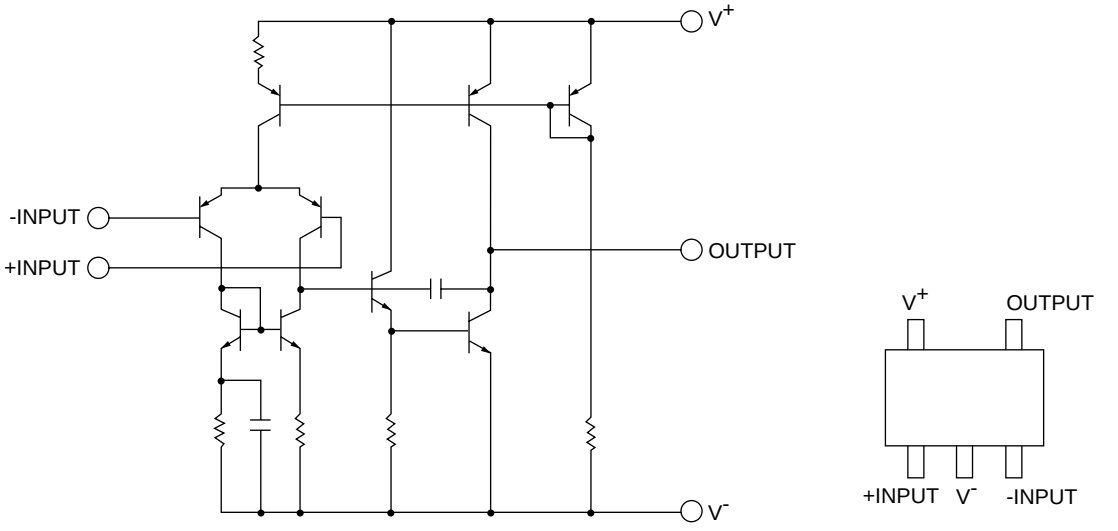
• Block Diagram



9-17. IC1101 LZ9GJ19+-1

Pin No.	Terminal name	Operation function	Pin No.	Terminal name	Operation function
1	VIN	Vertical sync signal input (positive polarity)	37	SPIO	Start signal input/output for source driver
2	CVOP	Vertical sync separation signal output	38	PDP	Phase comparison output
3	MON_E	Test setting output	39	GND	Ground power terminal
4	HSY	Horizontal sync signal input/output (negative polarity)	40	MON	Test setting output
5	VDD	Power terminal	41	GND	Ground power terminal
6	FRPT	Polarity inversion signal output for opposed polarity	42	GND	Ground power terminal
7	SYNI	Composite sync signal input	43	OSCO	Clock oscillation circuit output
8	FRPV	Polarity inversion signal output for video signal	44	OSCI	Clock oscillation circuit input/output
9	GND	Ground power terminal	45	VDD	Power terminal
10	VCS	Mask signal output for normal mode	46	GND	Ground power terminal
11	NTPC	Input for NTSC/PAL setting	47	CLD	Clock signal output for source driver
12	VSY	Vertical sync signal input/output	48	TST1	Test setting input
13	HRVC	Input for horizontal scanning direction setting	49	RESH	Horizontal counter reset input
14	VRVC	Input for vertical scanning direction setting	50	RESV	Vertical counter reset input
15	CLKC	Input for clock/sync signal input/output setting	51	TST2	Test setting input
16	MDS	Input for display mode setting	52	TEST	Test setting input
17	GND	Ground power terminal	53	MON_A	Test setting output
18	EXCL	Clock input/output	54	MON_B	Test setting output
19	GND	Ground power terminal	55	MON_C	Test setting output
20	MDW	Input for display mode setting	56	MON_D	Test setting output
21	MDN	Input for display mode setting	57	CLS	Clock signal output for gate driver
22	PWM	Backlight luminance control signal output	58	SPS	Reset signal output for gate driver
23	MON_F	Test setting output	59	VR	Scan setting input for gate driver
24	VSWC	VSWO output control input	60	MOD1	Control signal for gate driver
25	VCSWI	Video system selection input	61	TCLK	Test setting input
26	VSWO	Video system selection output	62	GND	Ground power terminal
27	VDD	Power terminal	63	GND	Ground power terminal
28	SPOI	Start signal input/output for source driver	64	GPS	Signal output for gate power supply
29	GND	Ground power terminal	65	LOWI	Control signal input for gate driver
30	PCP	Test setting output	66	ABC	Input for output setting
31	CLOC	EXCL terminal output mode selection input	67	VDD	Power terminal
32	MOD2	Control signal output for gate driver	68	GND	Ground power terminal
33	HR	Horizontal scan setting output for source driver	69	DVTC	Test setting input
34	IHR	Horizontal scan setting output for source driver	70	BLKI	Both sides position adjustment input
35	PS	Control signal output for source driver	71	BLKO	Both sides position adjustment output
36	CTR	Control signal output for source driver	72	SYNO	Composite sync signal output

9-18. IC1102 NJM2107F

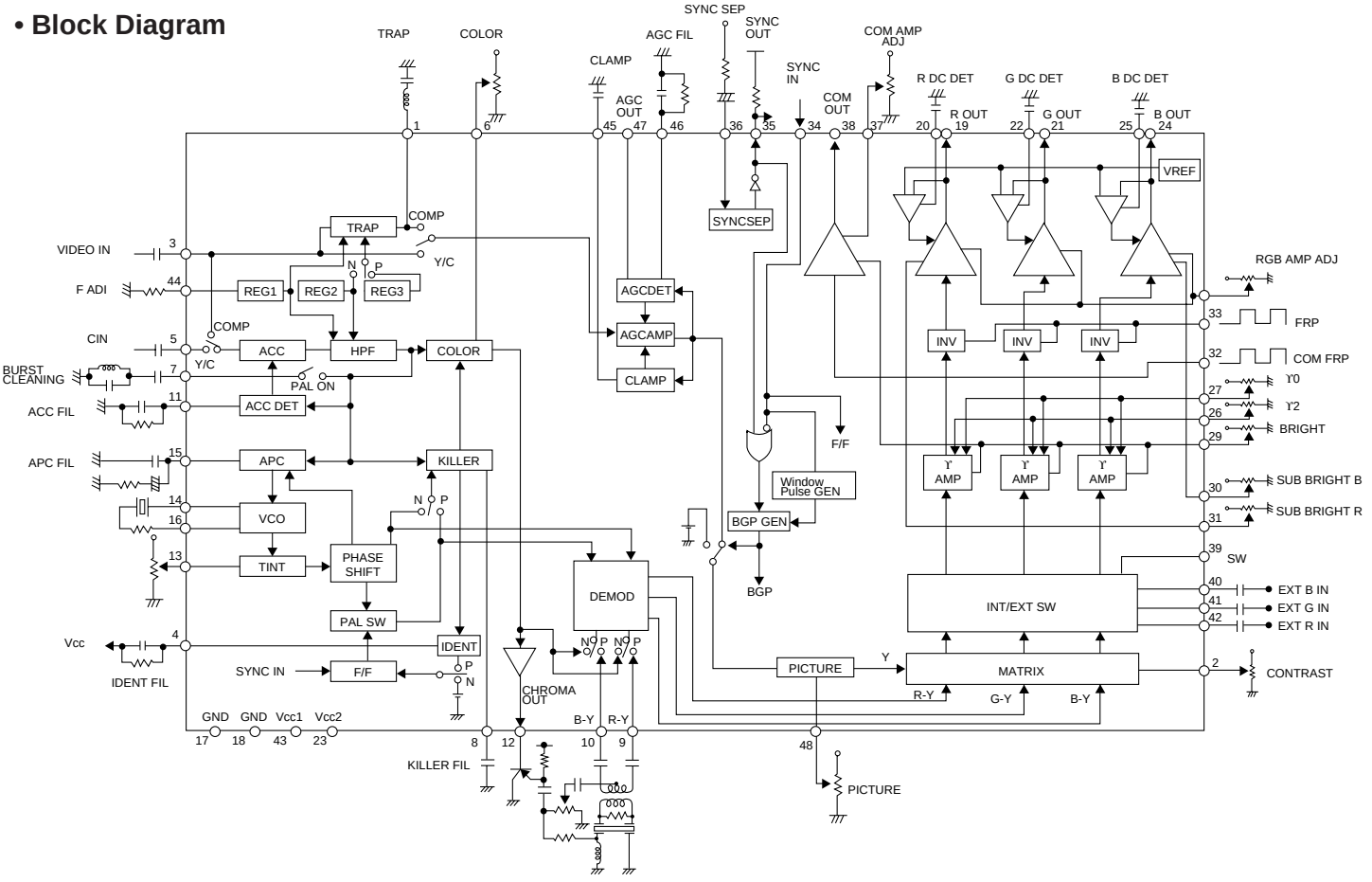


9-19. IC1801 IR3Y29BM

Pin No.	Terminal name	Operation function
1	TRAP	It is a trap connection terminal. Output impedance is 1kΩ.
2	CONTRAST	Adjustment can be done the signal contrast from the video input (Y/C input).
3	VIDEO IN	It is the input terminal of the composite video signal (in the case of the Y/C input, Y signal).
4	IDENT FILTER	It is a filter connection terminal for ident detection.
5	C IN	It is the input terminal of the chroma signal at the time of the y/c input. It comes to deal with composite video input when this terminal is articulated in GND again.
6	COLOR	It is a color adjustment terminal.
7	BURST OUT	A burst cleaning coil is articulated at the time of the PAL preference.
8	KILLER FILTER	It is the connection terminal of the filter for killer detection.
9 10	R-Y B-Y	It is the input terminal of the color difference demodulation circuit.
11	ACC FILTER	It is the connection terminal of the filter for the ACC detection.
12	CHROMA OUT	A collar is adjusted, and it is the output terminal of the chroma signal which went ahead of the burst.
13	TINT	It is a terminal for the hue adjustment. The transfer switch of NTSC/PAL is included, and it comes to deal with PAL by articulating it in GND.
14	VCO IN	It is the input terminal of VCO.
15	APC FILTER	It is the connection terminal of the filter for the APC detection.
16	VCO OUT	It is the output terminal of VCO.
17,18	GND1,2	GND1, GND2 aren't articulated inside the integrated circuit. Give me these terminals as the surely same electric potential.
20 22 25	R DC DET G DC DET B DC DET	It is the smoothing capacitor connection terminal of the feedback circuit for the RGB output DC level control. Employ the condenser which leakage is rare in for the high impedance.
19 21 24	R OUT G OUT B OUT	It is the output terminal of the RGB primary colors signal.
23	Vcc2	It is a power source connection terminal for the RGB Hara output.
26	GAMMA 2	Adjustment can be done the point of the gamma 2. This terminal is preset inside.
28	RGB AMPLITUDE ADJUST	Adjustment can be done between black-black of the RGB output signal the swing and the dynamic range. This terminal is preset inside.
27	GAMMA 0	Adjustment can be done the point of the gamma 0. This terminal is preset inside.
29	BRIGHT	A gamma compensation curve and the adjustment of the swing of common output can be done.
30 31	SUB BRIGHT B SUB BRIGHT R	It interlocks with the gamma compensation curve, and R and the slight adjustment of bright of B can be done. This terminal is preset inside.
32	COMMON FRP	It is the input terminal of the timing pulse for level switching of the COMMON output.
33	FRP	It is the input terminal of the timing pulse for the RGB output inversion. It is inverted with L, and it becomes non-inverting with H.
34	SYNC IN	It is the input terminal of low active horizontal synchronizing. A flip-flop is inverted at the time of PAL at the start of this synchronizing signal.
35	SYNC OUT	High active, and the composite synchronizing signal isolated in the synchronous separation circuit is outputted. An output form is open collector.
36	SYNC SEP	It is a synchronous separation circuit input terminal.
37	COMMON AMPLITUDE ADJUST	The adjustment of the COMMON signal amplitude can be done. This terminal is preset inside.
38	COMMON OUT	It is the output terminal of the COMMON signal.
39	SW	It is a SW signal input terminal whether to display either RGB input or video input. 'H' Or, it is open, and video input (Y/C input) is chosen in the RGB input, 'L'.
40 41 42	B IN G IN R IN	It is the input terminal of the RGB signal. Input a signal by the capacitive coupling.
43	Vcc	It is a power source connection terminal.
44	F ADJ	The characteristics of the built-in filter can do adjustment by the value of the backlash articulated in this terminal.18kΩ is recommended with both NTSC and PAL. Give me articulated backlash as the resistance value tolerance ± 2%, temperature characteristic ±200ppm/°C.
45	CLAMP	It is the connection terminal of the capacity for the pedestal clamp of the luminance signal. Employ the condenser which leakage is rare in for the high impedance.
46	AGC FILTER	It is the connection terminal of the filter for the automatic gain control detection of the luminance signal.

Pin No.	Terminal name	Operation function
47	AGC OUT	It is the terminal which the voltage detected in the automatic gain control detector circuit of the luminance signal is outputted in. Output voltage rises the output voltage.
48	PICTURE	The frequency characteristic of the luminance signal can do adjustment. When a voltage is lowered, emphasis is put on the contour.

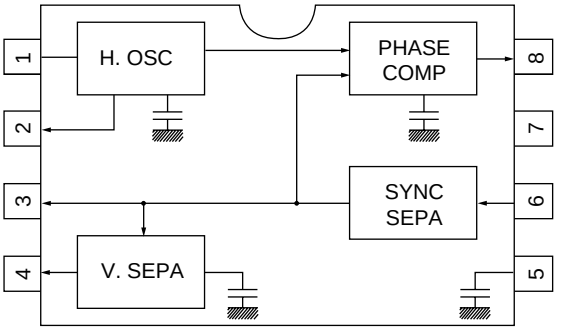
• Block Diagram



9-20. IC1900 BA7046F

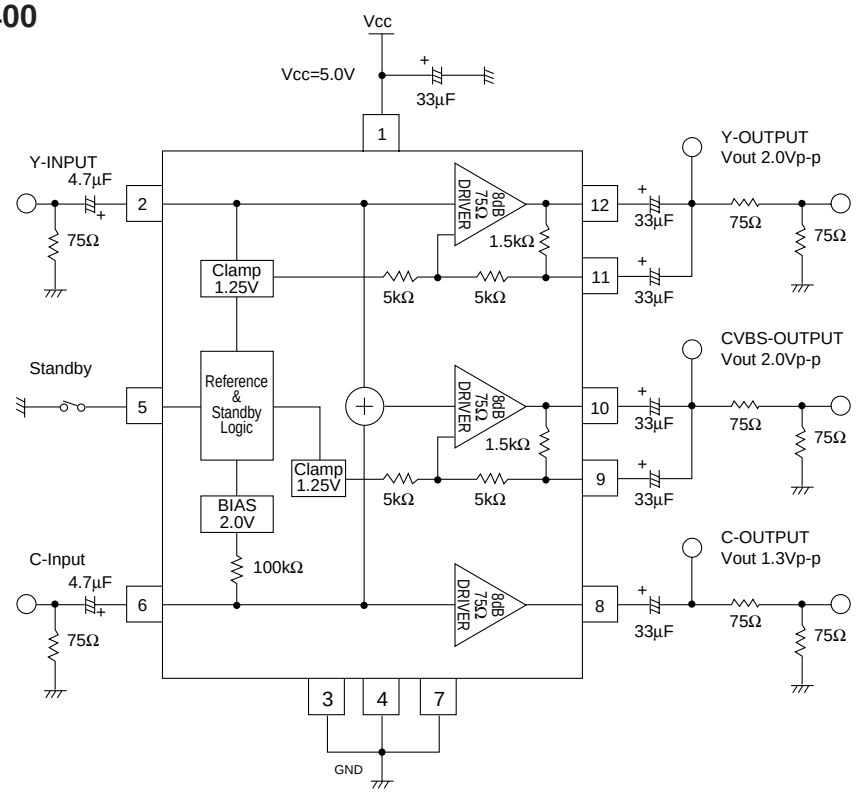
Pin No.	Function
1	A horizontal oscillation backlash terminal
2	HD output terminal
3	SYNC output terminal (Open Collector)
4	VD output terminal
5	GND terminal
6	Video input terminal
7	Power terminal
8	Phase comparator output terminal

• Block Diagram



9-21. IC2102 TK15400

• Block Diagram



9-22. IC3200 IX1625GE

Pin No.	I/O	Terminal name	Operation function	Remarks
1	–	NC		
2	O	BLK	Blanking signal output	To LCD decoder IC
3				
4	–	NC		
5	I	HSYNC	Horizontal sync signal input	From LCD decoder ICFrom LCD decoder IC
6	I	VSYNC	Vertical sync signal input	From LCD decoder IC
7	I	SCLK	Serial clock input	From DVD system computer
8	O	SOUT	Serial data output	To DVD system computer
9	I	SIN	Serial data input	From DVD system computer
10	I	SYNC	Composite sync signal input	From LCD decoder IC
11	I	PLLD	TVPLL lock signal input	From TV tuner
12	O	PLCS	TVPLL load EN output	To TV tuner
13	O	PCLK	Clock output for inner communication	To TV tuner, E^{2}PROM, and DAC IC
14	O	POUT	Data output for inner communication	To TV tuner, E^{2}PROM, and DAC IC
15	I	SAFE	Not used. "H"	
16	O	RGB	Not used. "L"	
17	O	MRDY	READY output	From DVD system computer
18	O	POW	Power on/off control output	To DCDC converter
19	I	PIN	Data input for inner communication	From E^{2}PROM
20	O	K3	Not used.	
21	–	NC		
22	O	K2	Key matrix output2	To operation panel
23				
24	O	NC		
25	I	K1	Key matrix output1	
26	I	K0	Key matrix output0	
27	I	S3	Key matrix input3	
28	I	S2	Key matrix input2	
29	I	S1	Key matrix input1	
30	I	S0	Key matrix input0	

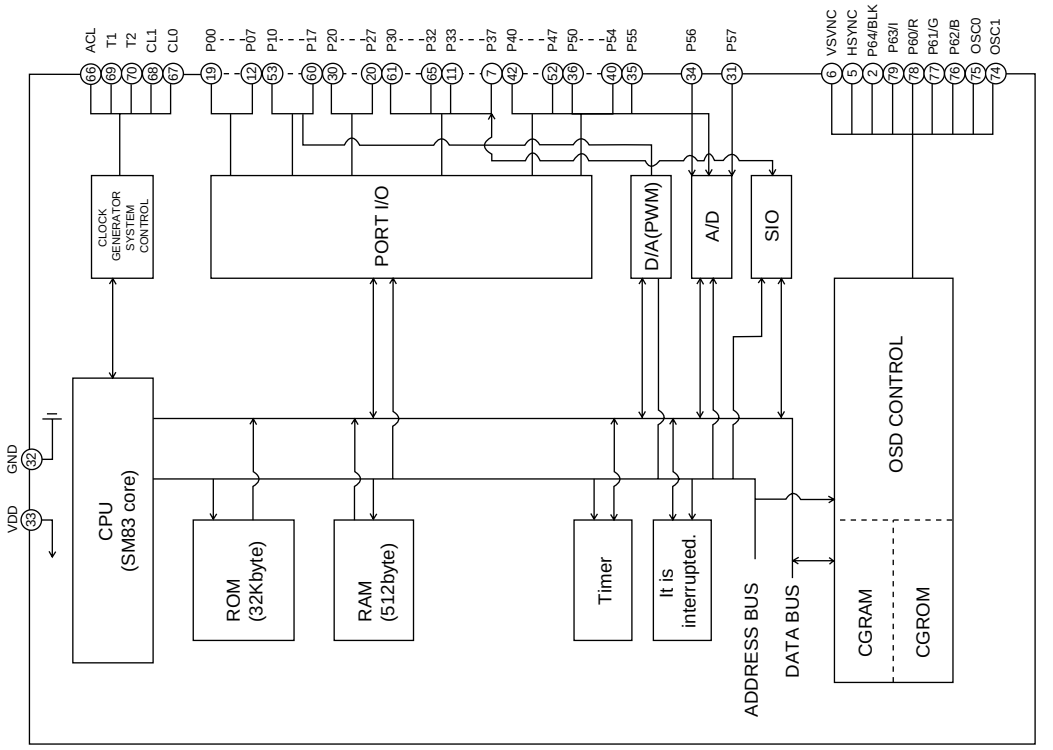
Pin No.	I/O	Terminal name	Operation function	Remarks
31	I	ST/MT	Input for destination setting	L: Japan
32	–	GND		GND
33	–	NC	Not used. (Pull-up)	
34	O	MONO	Not used.	
35	I	AFT	AFT voltage inputFrom LCD decoder IC	From TV tuner
36	O	PDET	Battery monitor AD input	
37	I	AGC	AGC voltage input	From TV tuner
38	I	VOL	Not used.	
39	I	POW IN	Power button input	
40	I	IREM	Remote control input	From remote control light receiving unit
41	–	NC		
42	O	MODW	Panel selection output (1)	To LCD control IC
43				
44		MODN	Panel selection output (2)	
45	O	VSW	Not used.	
46	O	MIRST	DVD microcomputer reset output	To DVD system computer interface IC
47	O	DVD P	DVD circuit power control	To DVD power switch circuit
48	I	LCD SW	Liquid crystal panel open/close interrupt	From liquid crystal open/close detection switch
49	O	LCD H	Backlight ON/OFF control	From E^2PROMTo liquid crystal inverter unit
50	–	NC		
51	–	NC		
52	O	LED1	LED control (green)	To LED lighting circuit
53	O	AV-S	TD/DVD video/audio selection output	To video SW IC/audio SW IC
54	O	LED2	LED control (red)	To LED lighting circuit
55	O	AV-P	TD/DVD video/audio selection output	To video SW IC/audio SW IC
56	O	DEF	Defeat output	
57	O	EPCS	E^2PROM chip select	To E^2PROM
58	O	DACS	DAC chip select	To adjustment DAC IC
59	O	FLOF	PAL/NTSC switching terminal	
60	O	IN H	External input control	To video SW IC/audio SW IC
61	I	PSW	Not used.	
62	O	SMUTE	Audio mute output	To audio output circuit
63				
64	–	NC		
65	O	PMUTE	Video mute output	To LCD decoder circuit
66	I	ACL	ACL input	From 2VREG/reset generation IC
67	–	CLI	System clock input	Oscillator
68	–	CLO	System clock output	Oscillator
69		T1	Test input1	GND
70		T2	Test input2	GND
71	–	GND	Reference potential	GND
72	–	GND	Reference potential	GND
73	–	VDD	Power supply	4.5~5.5V
74	–	OSCI	Sign clock input	To OSD oscillation coil
75	–	OSCO	Sign clock output	To OSD oscillation coil
76		B	Blue sign output	To LCD decoder IC
77		G	Green sign output	To LCD decoder IC
78		R	Red sign output	To LCD decoder IC
79		FMCS	Not used.	
80	–	NC.		

Pin No.	I/O	Terminal name	Operation function	Remarks
2	O	BLK	Blanking signal output	H ... OSD display
3				L ... Blank (television image)
5	I	HSYNC	Horizontal synch signal input	Negative polarity input
6	I	VSYNC	Vertical sync signal inputNegative polarity input	
7	I	SCLK	Serial clock input/output	Clock input during serial communication with DVD microcomputer
8	O	SOUT	Serial data output	Data output during serial communication with DVD microcomputer
9	I	SIN	Serial data input	Data input during serial communication with DVD microcomputer
10	I	SYNC	Composite sync signal input	Used for sync judgment in the search mode.
11	I	PLLD	TVPLL lock signal input*	Used to judge whether TVPLL is locked in the receiving frequency or not. H ... Unlocked state L ... Locked state
12	O	PLCS	TVPLL load EN output*	H ... During data transmission to TVPLL L ... When data is not transmitted.
13	O	PCLK	Clock output for inner communication	Serial clock output to E^2PROM/TVPLL*/DAC
14	O	POUT	Data output for inner communication	Serial data output to E^2PROM/TVPLL*/DAC
15	I	SAFE		Fixed at “H”.
16	O	RGB		Fixed at “L”.
17	O	MRDY	READY output	READY signal output during serial communication with DVD H ... Command reception disable (BUSY state) L ... Command reception enable (READY state)
18	O	POW	Power on/off control	DC/DC power control H ... Power ON L ... Power OFF (stand-by)
19	I	PIN	Data output for inner communication	Serial data input to E^2PROM
20	O	K3	Not used.	
22	O	K2	Key matrix output2	
23				
25	O	K1	Key matrix output1	
26	O	K0	Key matrix output0	
27	I	S3	Key matrix input3	Key matrix input
28	I	S2	Key matrix input2	
29	I	S1	Key matrix input1	
30	I	S0	Key matrix input0	
31	I	ST/MT	Input for US setting	H ... US, L ... Japan
34	O	MONO	Not used.	
36	O	S	AD input for battery monitor	
39	O	M	Power button input	H ... Po wer ON L ... Power OFF
35	I	AFT	AFT voltage input*	Tuner AFT voltage input
37	I	AGC	AGC voltage input*	Tuner AGC voltage input
38	I	VOL	Sound volume AD input	Sound VOL input
40	I	R/C	Remote control input	Infrared remote control input
42	O	MODW	Panel selection input(1)	
43				
44		MODN	Panel selection input(2)	
45	O	VSW	Not used.	
46	O	MIRST	DVD microcomputer reset output	H ... Normal, L ... Reset
47	O	DVD P	DVD circuit power control	H ... ON, L ... OFF
48	O	LCDSW	Liquid crystal panel open/close interrupt	H ... OPEN, L ... CLOSE
49	O	LCDH	Liquid crystal system circuit power control	H ... ON, L ... OFF

MODW	MODN	Display mode
H	H	Full-screen mode
H	L	Wide mode
L	H	Normal mode
L	L	Cinema mode

Pin No.	I/O	Terminal name	Operation function	Remarks
52	O	LED1	LED control (green)	LED control
53	O	AV S	DVD/TV control	"H" is output during TV tuner reception.
54	O	LED2	LED control (red)	LED control
55	O	AV P	DVD/TV control	"H" is output during TV tuner reception and external input.
56		DEF	Defeat output	H ... External synchronization (normal) L ... Internal synchronization (in the auto preset mode/during OSC adjustment)
57	O	EPCS	EPROM chip select	H ... During data transmission/reception with E^2PROM L ... When data is not transmitted.
58	O	DACS	DAC chip select	H ... During data transmission to DAC L ... When data is not transmitted.
59	O	FLOF	DVD video mute	H ... Normal L ... DVD video mute
60	O	IN H	External input control	H ... External input, L ... DVD/TV mode
61	I	PSW	Not used.	
62	O	SMUTE	Audio mute output	L ... Speaker sound mute H ... Normal
63				
65	O	PMUTE	Video mute output	L ... Video mute H ... Normal
79	O	FMCS	Not used.	

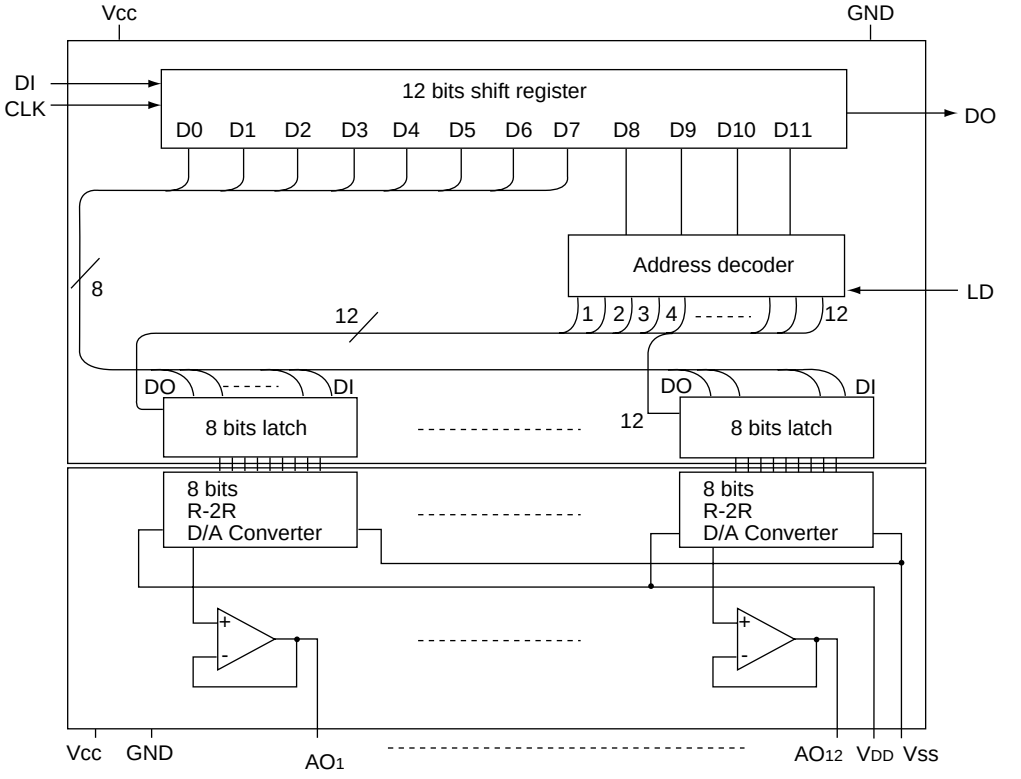
• Block Diagram



11-23. IC3201 MB8346BV

Pin No.	I/O	Terminal name	Remarks
17	I	Data input terminal	The 12-bit serial data is input.
14	O	Data output terminal	The bit data of MSB of 12-bit shift register is output.
16	I	Shift clock input terminal	The input signal form the DI terminal is input into 12-bit shift register when the shift clock reises.
15	I	Load signal input terminal	When “H” level is input, the data of the 12-bit shift register is loaded to the decoder and register for D/A output.
18, 19, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13	O	D/A output teminal	Analog data of 8-bit D/A converter with OP amplifier is output.
11	–	Power terminal	Power terminal of MCU interface/OP amplifier
20	–	GND terminal	Ground terminal of MCU interface/OP amplifier
10	–	Power terminal	Power terminal of D/A converter
1	–	GND terminal	Ground terminal of D/A converter

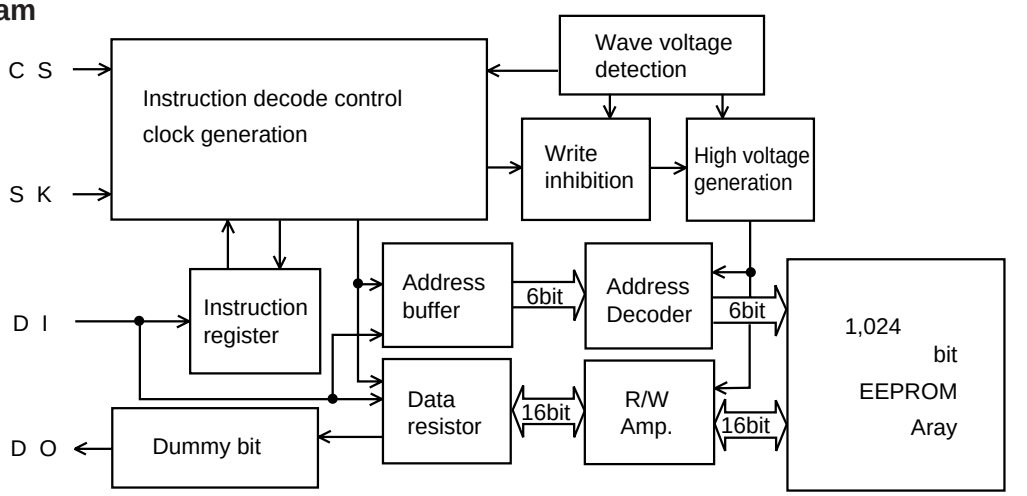
• Block Diagram



9-24. IC3202 BR93L46F

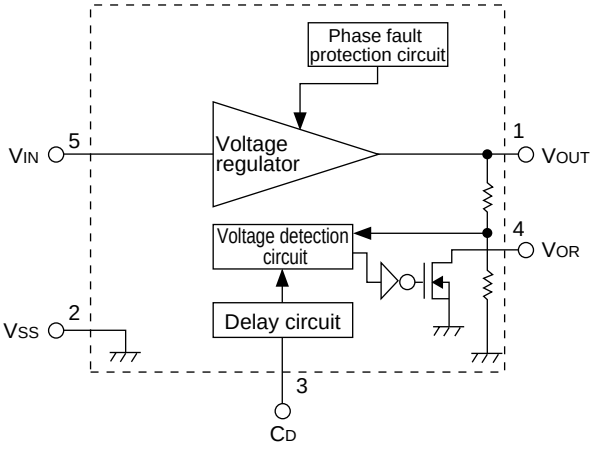
Terminal	Terminal name	In/Output	Function
2	VCC	–	Power
7	GND	–	All input/output reference voltage, 0V
3	CS	Input	Tip select input
4	CLK	Input	Sirial clock input
5	DIN	Input	Start bit, operation code, address and serial data input
6	OCNT	Output	Serial data output, READY/BUSY internal status indication output

• Block Diagram

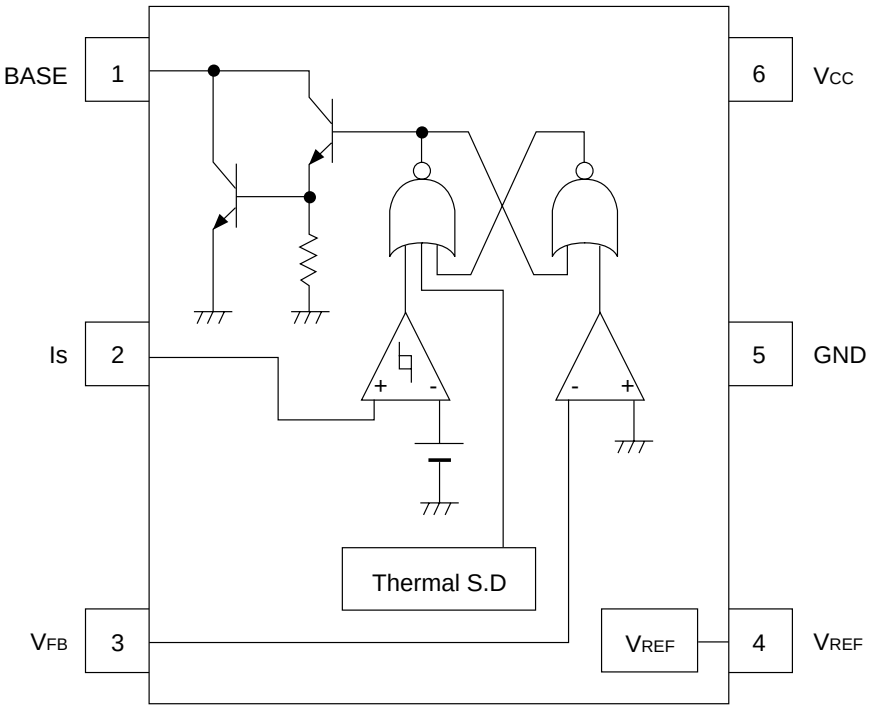


9-25. IC3205 S875045B

Pin No.	Terminal name	Remarks
1	V_{OUT}	Output terminal of voltage regulator
2	Vss	GND terminal
3	C_D	External capacitor connection terminal for delay of voltage detection circuit
	$\overline{V_{PF}}$	Power-off circuit input terminal
	SENSE	Voltage monitor terminal of voltage detection circuit
4	V_{OR}	Output terminal of voltage detection circuit, Nch open drain
5	V_{IN}	Positive power input terminal



9-26. IC3601 TK11835

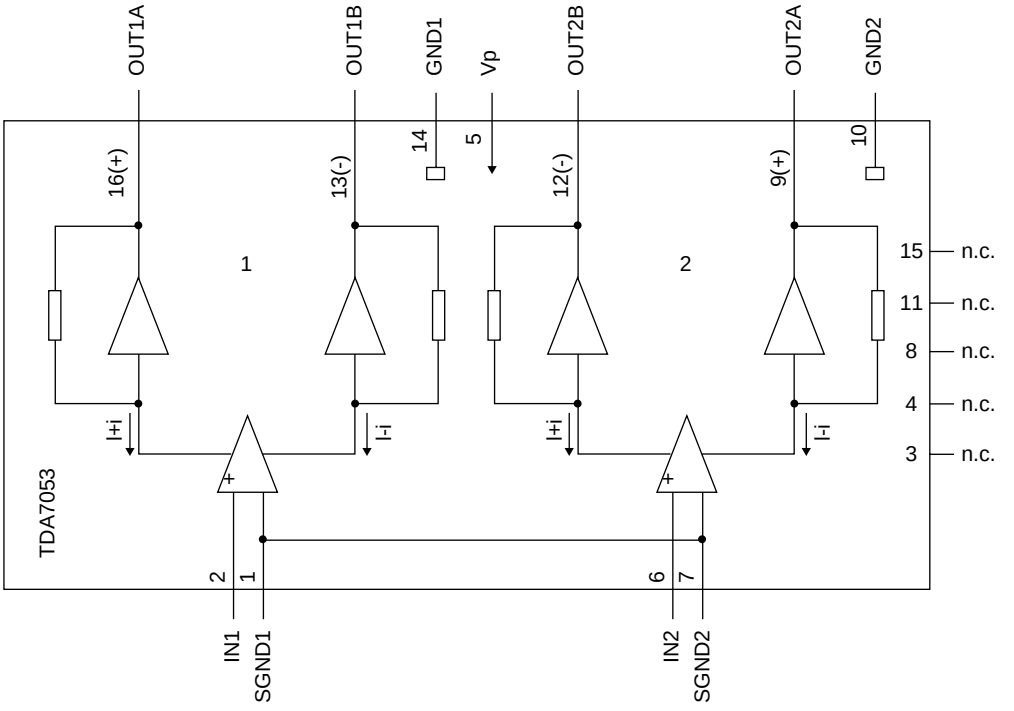


1.Power amplification Tr base drive
2.Electric current limitation
3.Output voltage feedback
4.Reference voltage
5.GND
6.Input

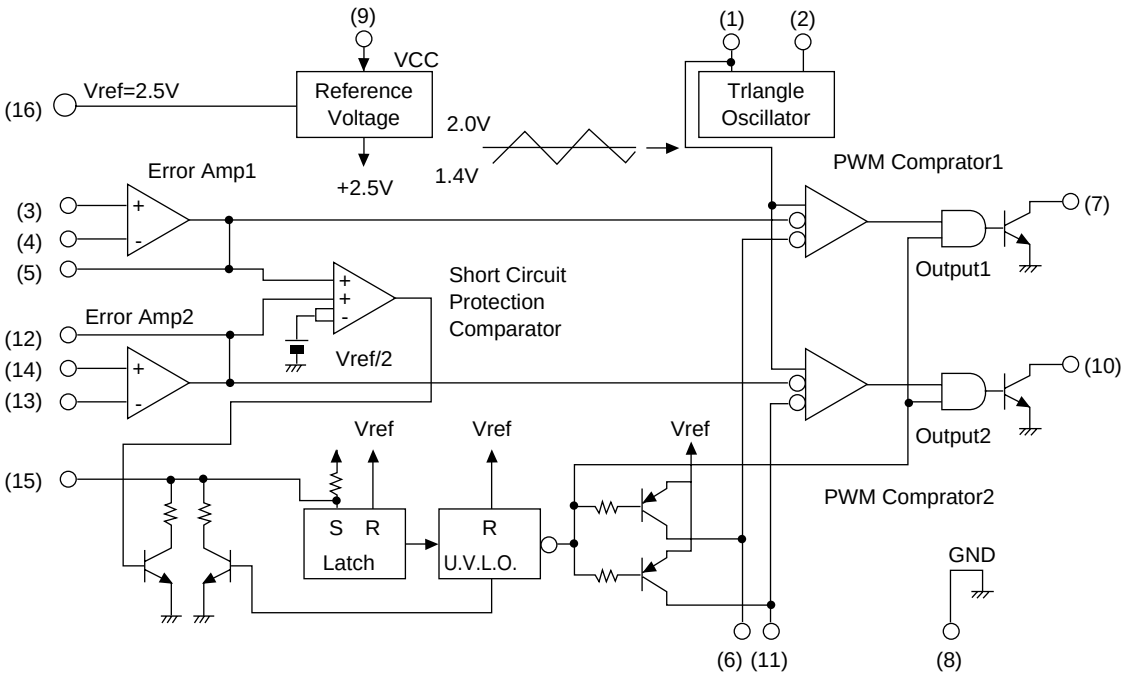
9-27. IC6002 TDA7053

Pin No.	Terminal name	Operation function	Pin No.	Terminal name	Operation function
1	SGND1	Signal ground1	9	OUT2A	Output2 (Positive)
2	IN1	Input1	10	GND2	Power ground2
3	n.c.	Not connected	11	n.c.	Not connected
4	n.c.	Not connected	12	OUT2B	Output2 (Negative)
5	Vp	Supply voltage	13	OUT1B	CH2 gain fixed input terminal
6	IN2	Input2	14	GND1	CH3 gain adjustment input terminal
7	SGND2	Signal ground2	15	n.c.	Not connected
8	n.c.	Not connected	16	OUT1A	VCC

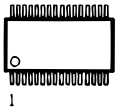
• Block Diagram



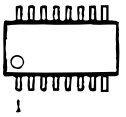
9-28. IC9001 TL1451AC



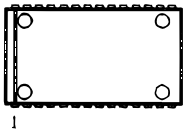
10. SEMICONDUCTOR LEAD IDENTIFICATION



IC701
VHiAN8473NS-1



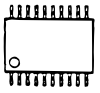
IC1901
VHiYTHC221AF-1
IC9001
VHiTL1451AC-1



IC401
RH-iX1484GEZZ

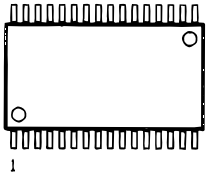
IC501
RH-iX1697GEZZ

IC2102
VHiTK15400/-1

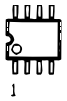


IC3201
VHiMB8346BV-1

IC703
VHi10324AFV-1

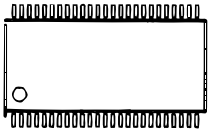


IC506
RH-iX1618GEZZ

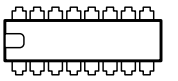


IC3202
VHiBR93L46F-1
IC1900
VHiBA7046F/-1

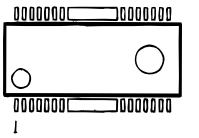
IC1101
VHiLZ9GJ19+-1



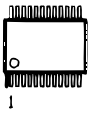
IC602
RH-iX0750TAZZ



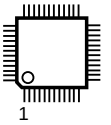
IC6002
VHiTDA7053/-1



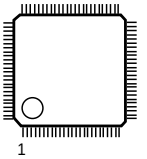
IC702
VHiBA5933FP-1



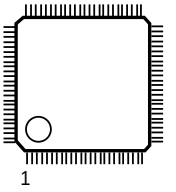
IC801
VHiPCM1716E-1



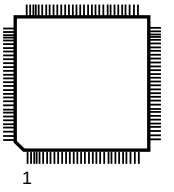
IC201
VHiMC44722A-1



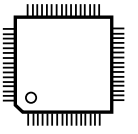
IC303
RH-iX1517GEZZ



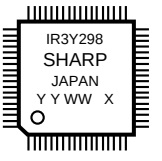
IC402
RH-iX1474GEZZ



IC504
RH-iX1478GEZZ



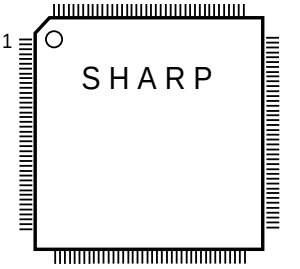
IC901
RH-iX1516GEZZ
IC512
RH-iX1535GEZZ



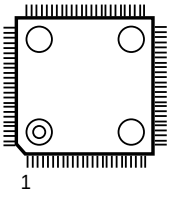
IC1801
VHiiR3Y29BM-1

IC1902
VHiTC4S81F/-1
IC1102
VHiNJM2107F-1
IC2103
VHiTC4S66F/-1

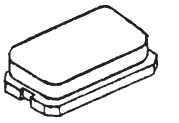
IC3601
VHiTK11835/-1



IC601
RH-iX1608GEZZ

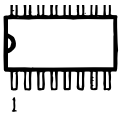


IC707
RH-iX1473GEZZ

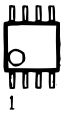


X601
RCRSC0031GEZZ

X702
RCRSC0035GEZZ
X1801
RCRSC0096TAZZ

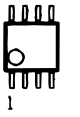


IC6202, IC6203
VHiTC4053BF-1
IC704
RH-iX1531CEZZ

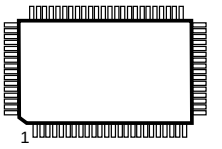


IC2101
VHiNJM2535V-1
IC1000
VHiMB3800PV-1

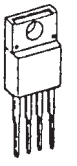
IC3301
VHiTC7W14U/-1



IC6602, IC1103,
IC6000
VHiNJM4560M-1



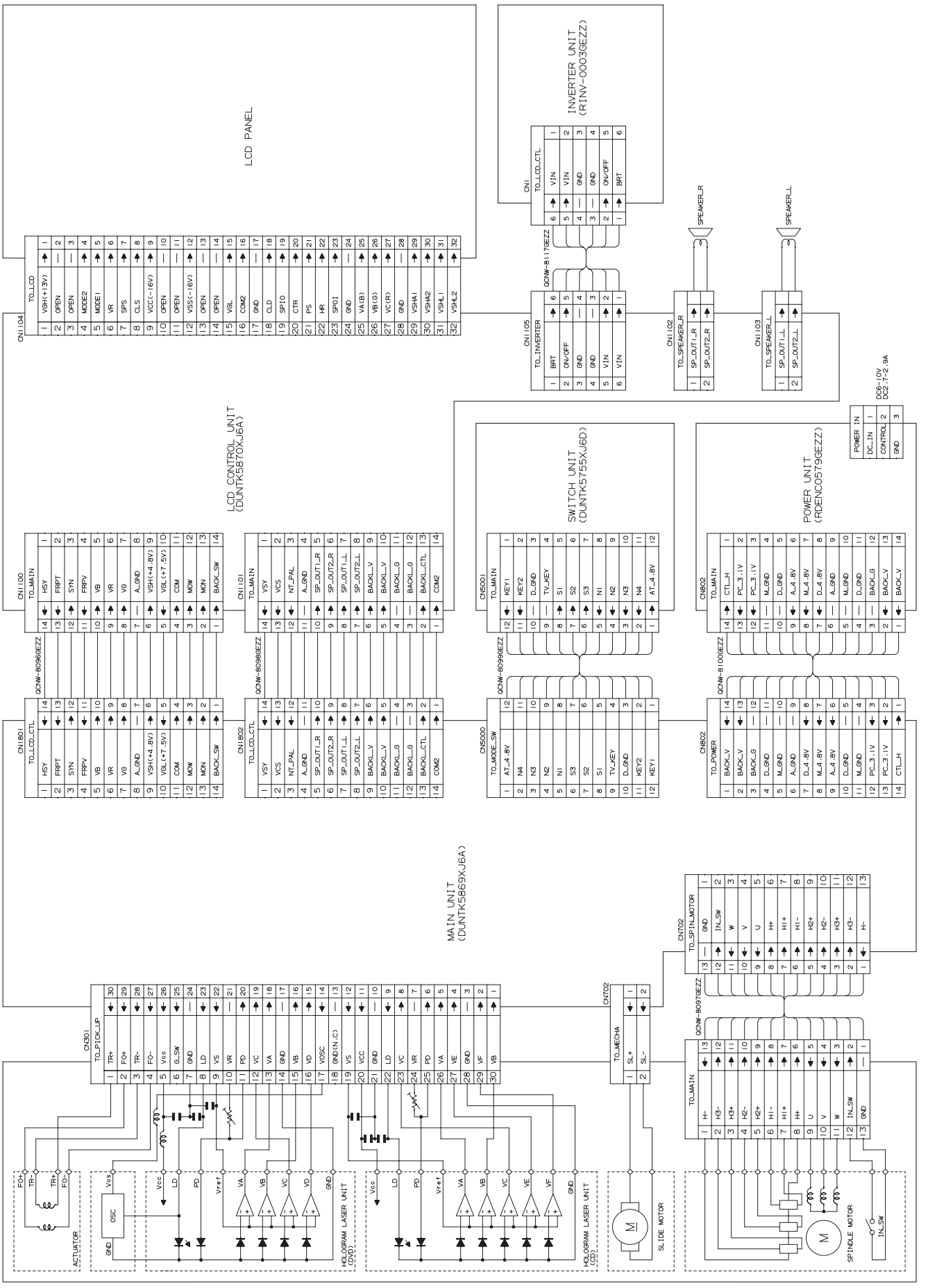
IC3200
RH-iX1625GEN2



IC6601
VHiPQ20WZ11-1

IC3205
VHiS875045B-1

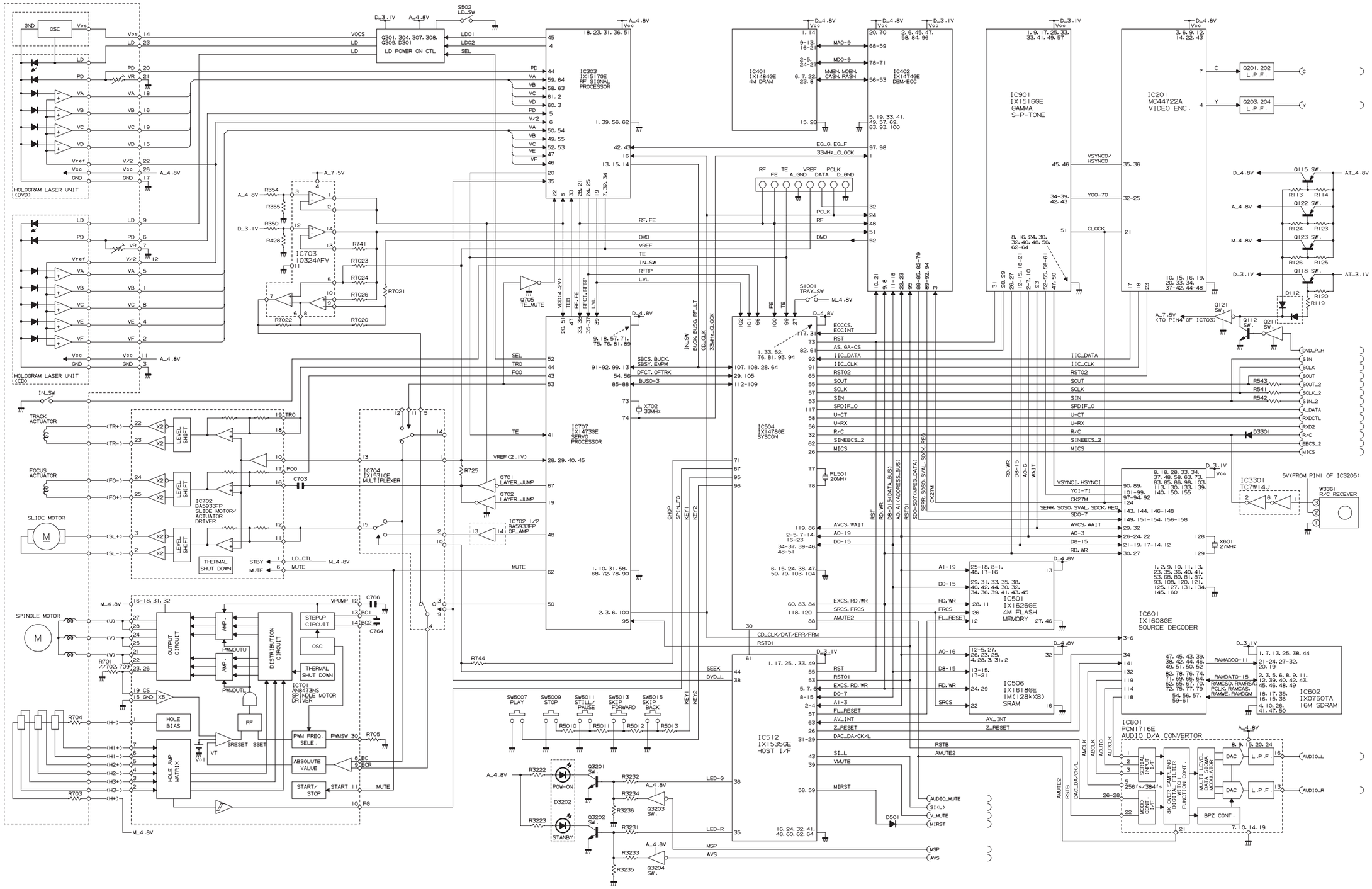
11. WIRING DIAGRAM



DV-L70S
DV-L70BL
DV-L70W

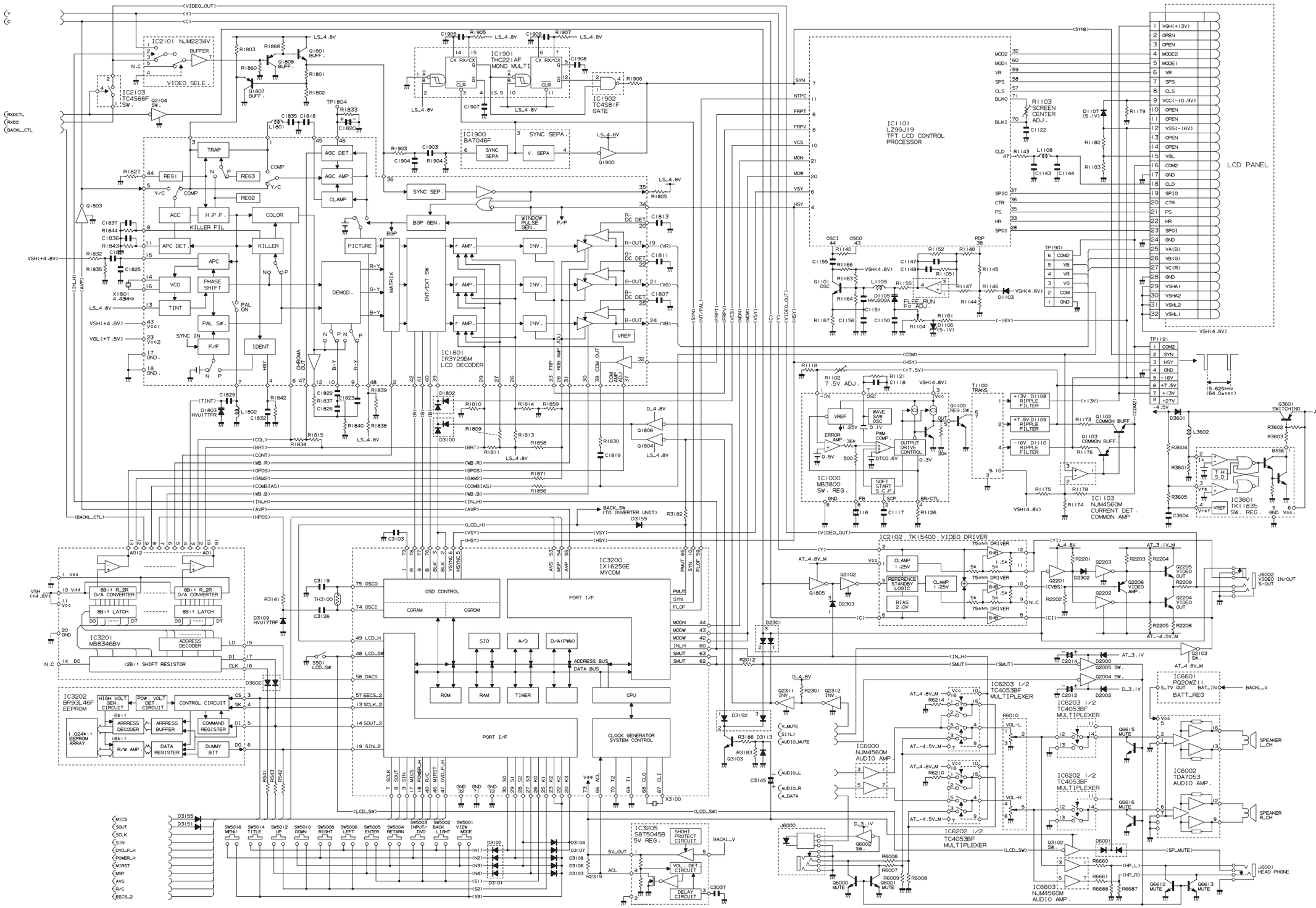
12. BLOCK DIAGRAMS

12-1. MAIN BLOCK DIAGRAM



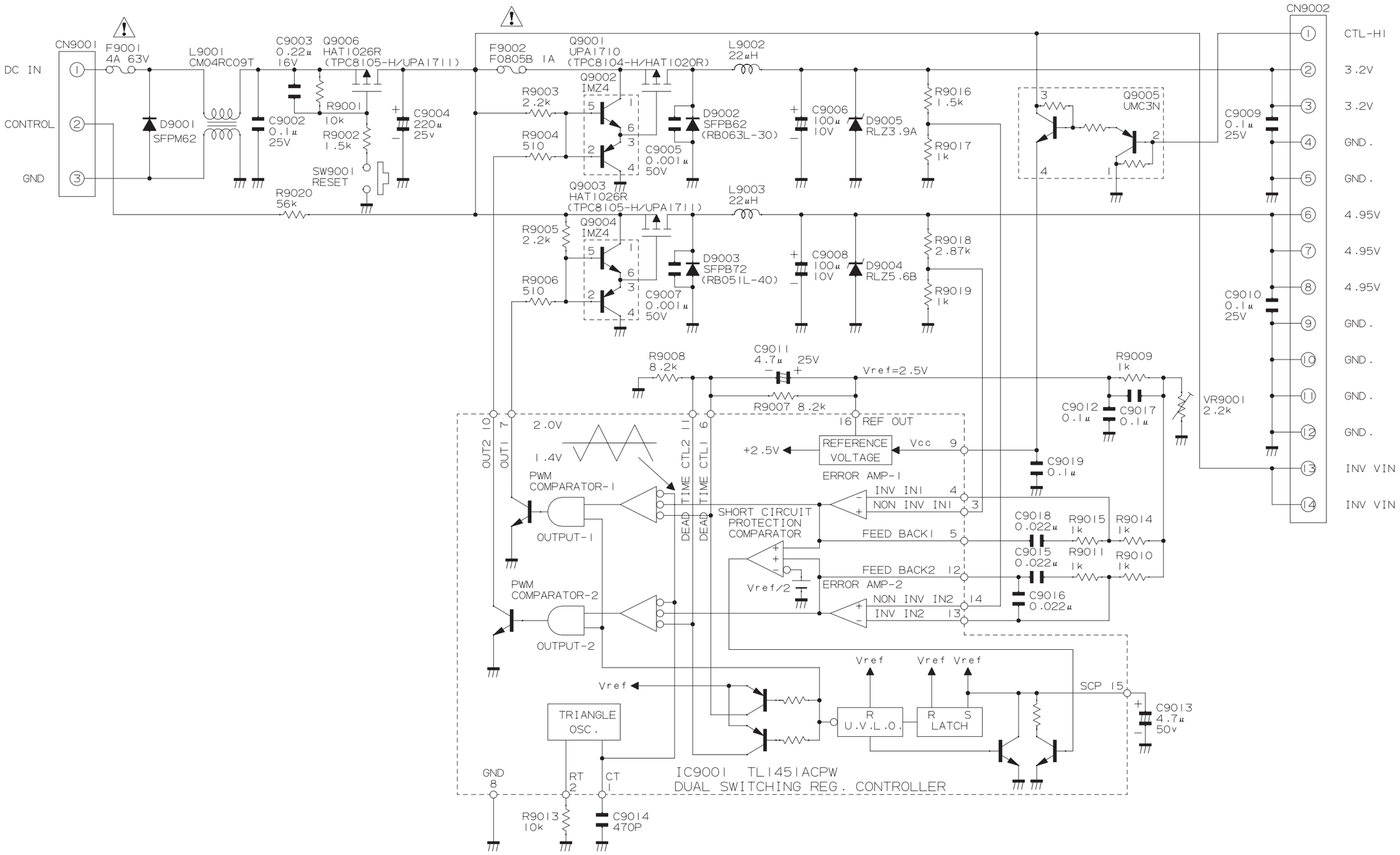
DV-L70S
DV-L70BL
DV-L70W

12-2. LCD BLOCK DIAGRAM



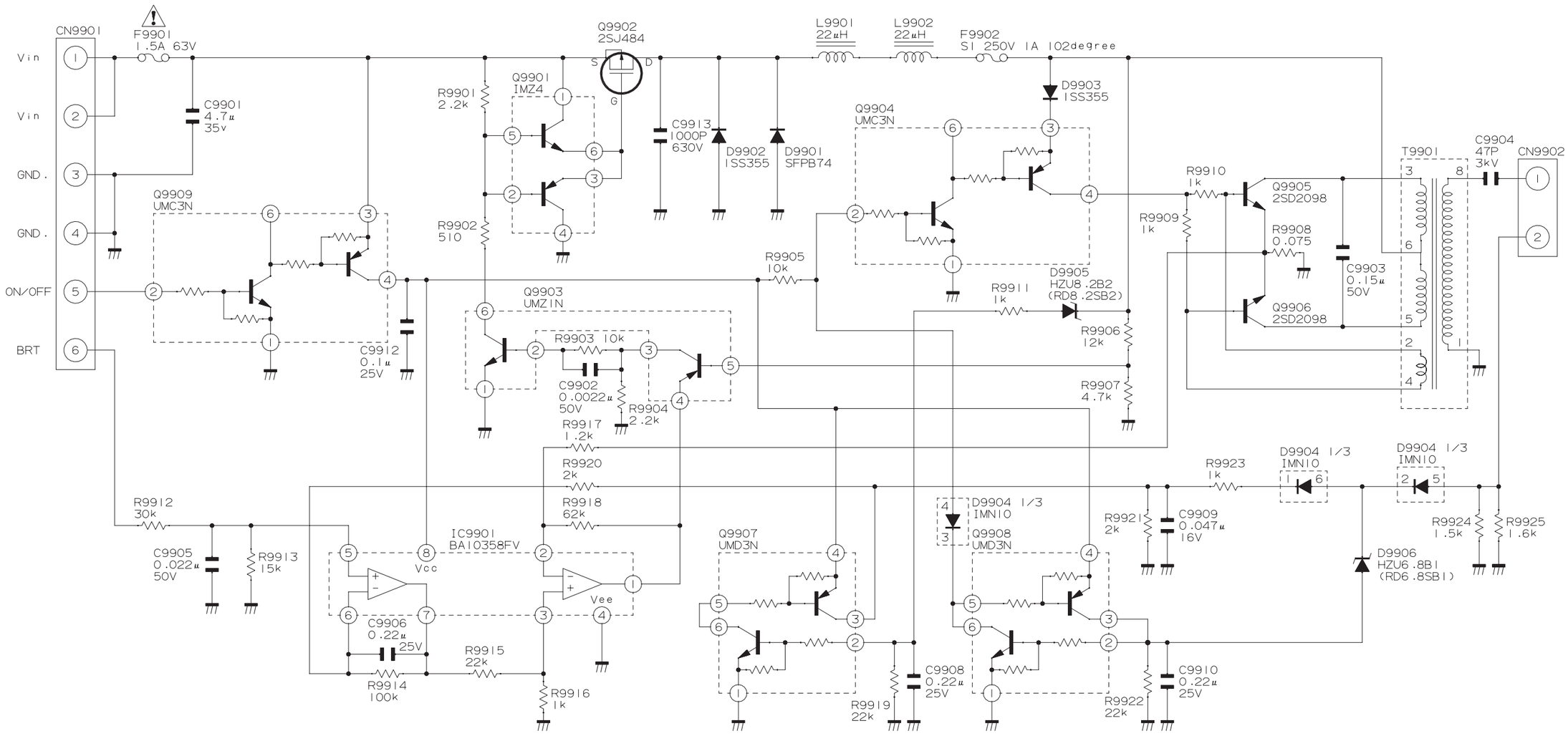
DV-L70S
DV-L70BL
DV-L70W

12-3. POWER BLOCK DIAGRAM



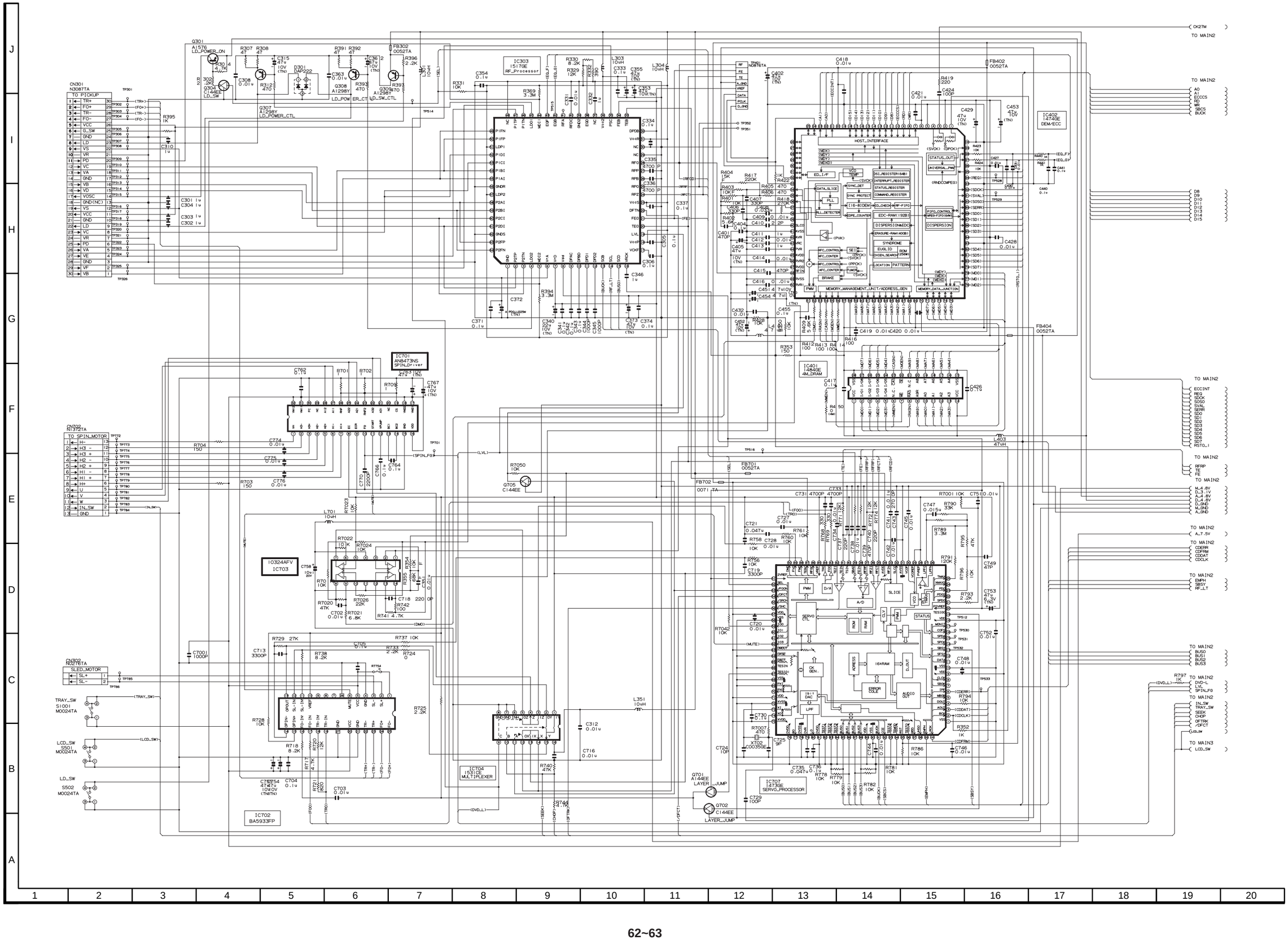
DV-L70S
DV-L70BL
DV-L70W

12-4. INVERTER BLOCK DIAGRAM



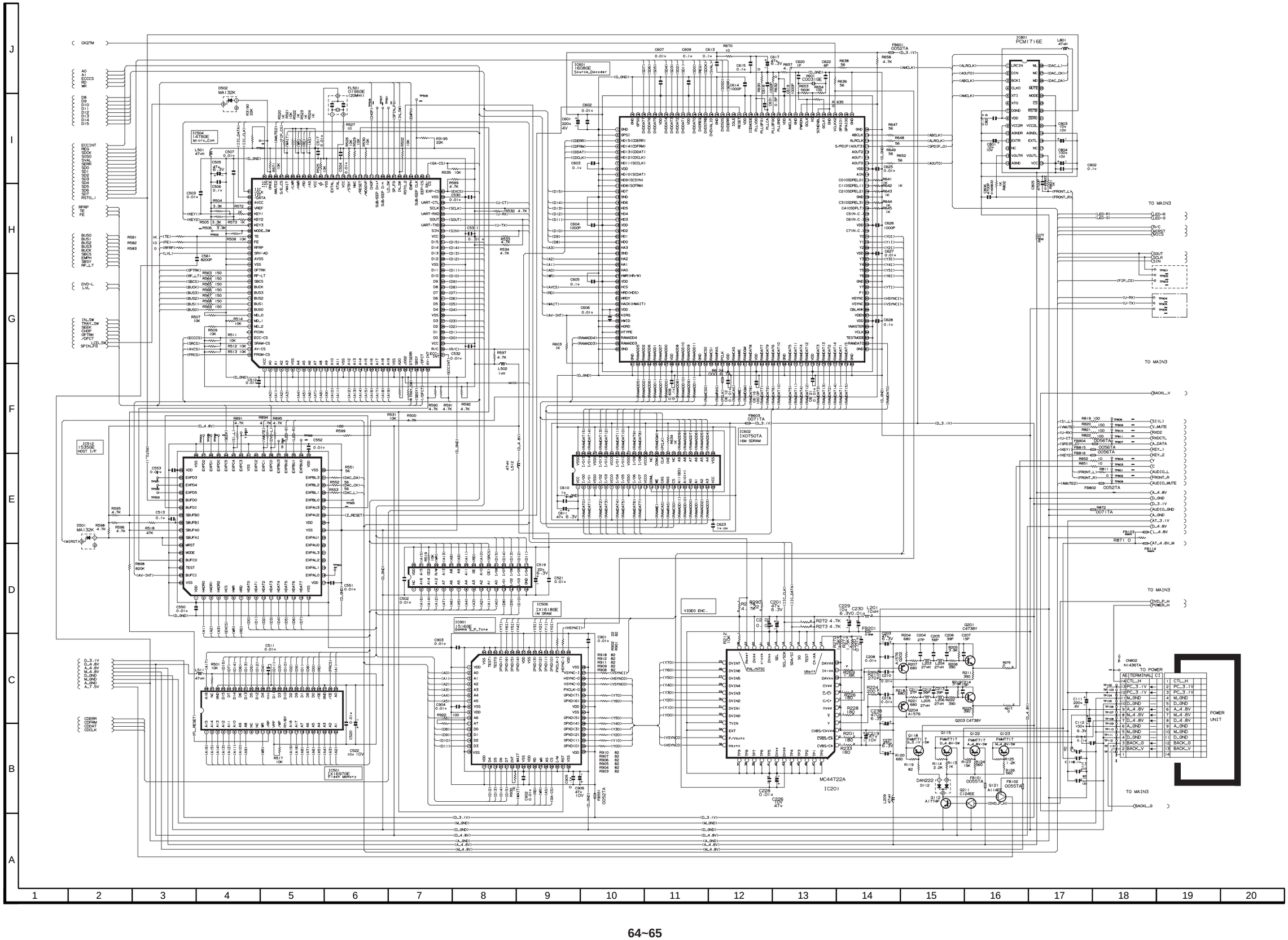
DV-L70S
DV-L70BL
DV-L70W

13. SCHEMATIC DIAGRAMS 13-1. MAIN (1) CIRCUIT SCHEMATIC DIAGRAM



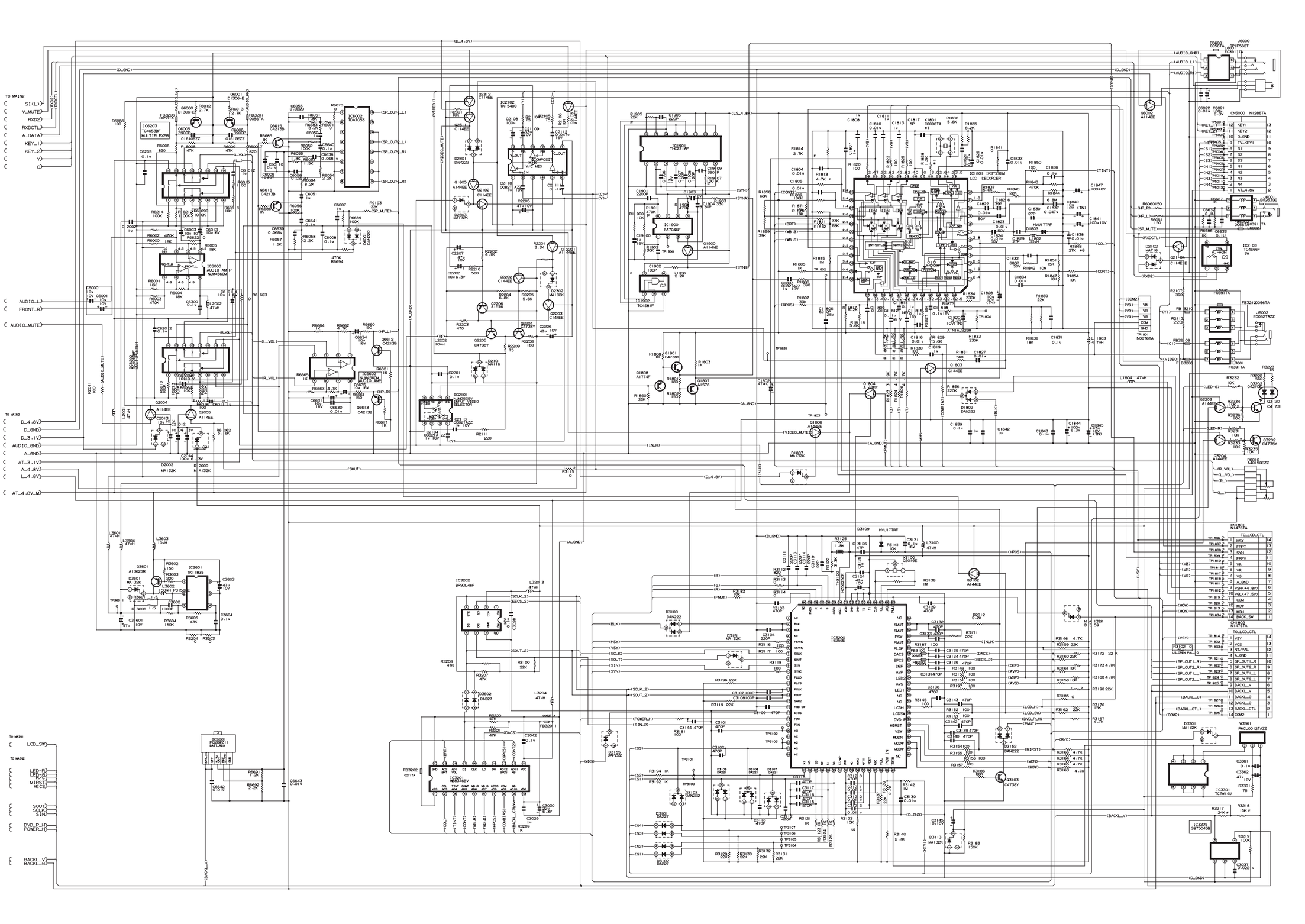
DV-L70S
DV-L70BL
DV-L70W

13-2. MAIN (2) CIRCUIT SCHEMATIC DIAGRAM



DV-L70S
DV-L70BL
DV-L70W

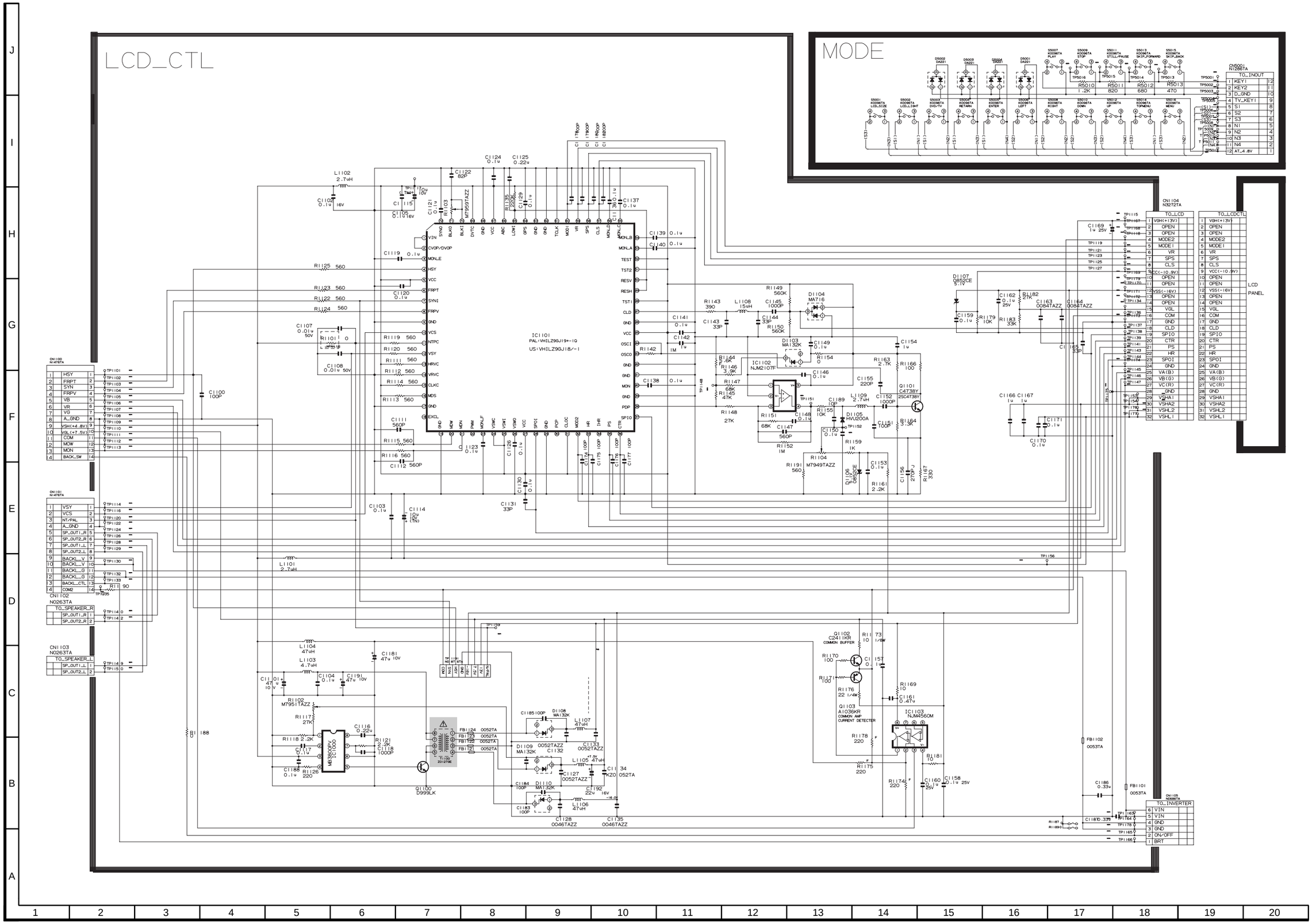
13-3. MAIN (3) CIRCUIT SCHEMATIC DIAGRAM


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
TO MAIN2
SI(L)
V_MUTE
RXD2
RXDCTL
A_DATA
KEY_1
KEY_2
Y
C
AUDIO_L
FRONT_R
AUDIO_MUTE
TO MAIN3
D_4.8V
D_GND
D_3.1V
AUDIO_GND
A_GND
AT_3.1V
A_4.8V
L_4.8V
AT_4.8V_M
IC6203 TC4053BF MULTIPLEXER
IC6000 AUDIO AMP NJM4565M
IC6002 TDA7053
IC6601 PD6062211 BATT_REG
IC2102 TK15400
IC1901 TH2274F
IC1900 BA7046F
IC1902 TC4581F
IC2101 NJM2595V INPUT VIDEO SELECTOR
IC1801 IR3Y29M LCD DECORDER
IC3300 62500E
IC3202 BR93L46F
IC3301 M65846BV
IC3205 S8T50458
IC2103 TC4566F SW
IC3301 TC7W14U
IC1801 NJM2595V INPUT VIDEO SELECTOR
IC6601 PD6062211 BATT_REG
IC6000 AUDIO AMP NJM4565M
IC6002 TDA7053
IC6203 TC4053BF MULTIPLEXER
IC1902 TC4581F
IC1900 BA7046F
IC1901 TH2274F
IC2102 TK15400
IC2101 NJM2595V INPUT VIDEO SELECTOR
IC3202 BR93L46F
IC3301 M65846BV
IC3205 S8T50458
IC2103 TC4566F SW
IC3301 TC7W14U
IC3300 62500E
IC1801 IR3Y29M LCD DECORDER
CN5000 N11286TA
CN1800 N14765TA
CN1801 N14766TA
J6000 E06276ZZ
J6001 E06276ZZ
J6002 E06276ZZ
J6003 E06276ZZ
J6004 E06276ZZ
J6005 E06276ZZ
J6006 E06276ZZ
J6007 E06276ZZ
J6008 E06276ZZ
J6009 E06276ZZ
J6010 E06276ZZ
J6011 E06276ZZ
J6012 E06276ZZ
J6013 E06276ZZ
J6014 E06276ZZ
J6015 E06276ZZ
J6016 E06276ZZ
J6017 E06276ZZ
J6018 E06276ZZ
J6019 E06276ZZ

DV-L70S
DV-L70BL
DV-L70W

13-4. LCD CIRCUIT SCHEMATIC DIAGRAM

⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS

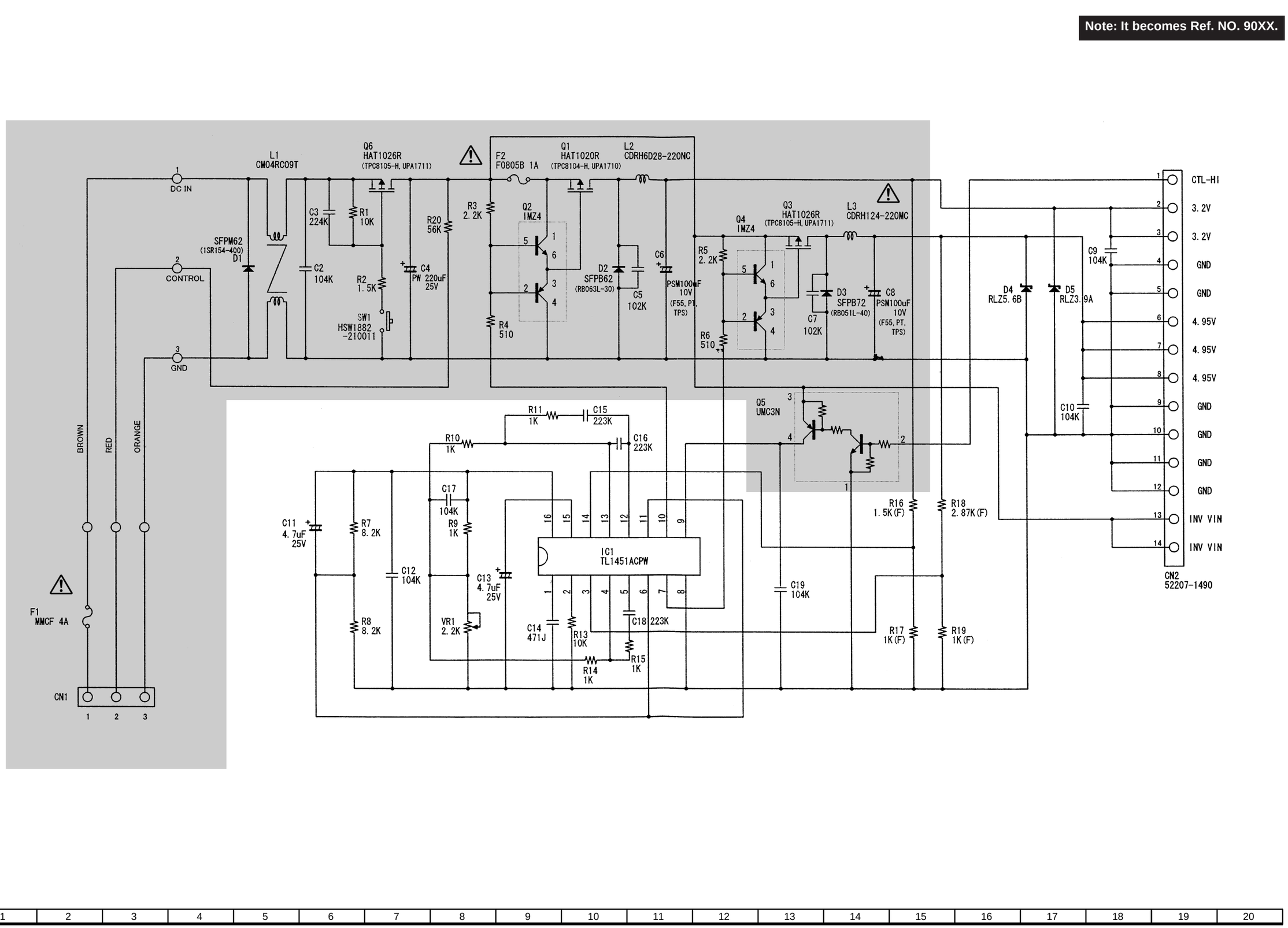


DV-L70S
DV-L70BL
DV-L70W

13-5. POWER CIRCUIT SCHEMATIC DIAGRAM

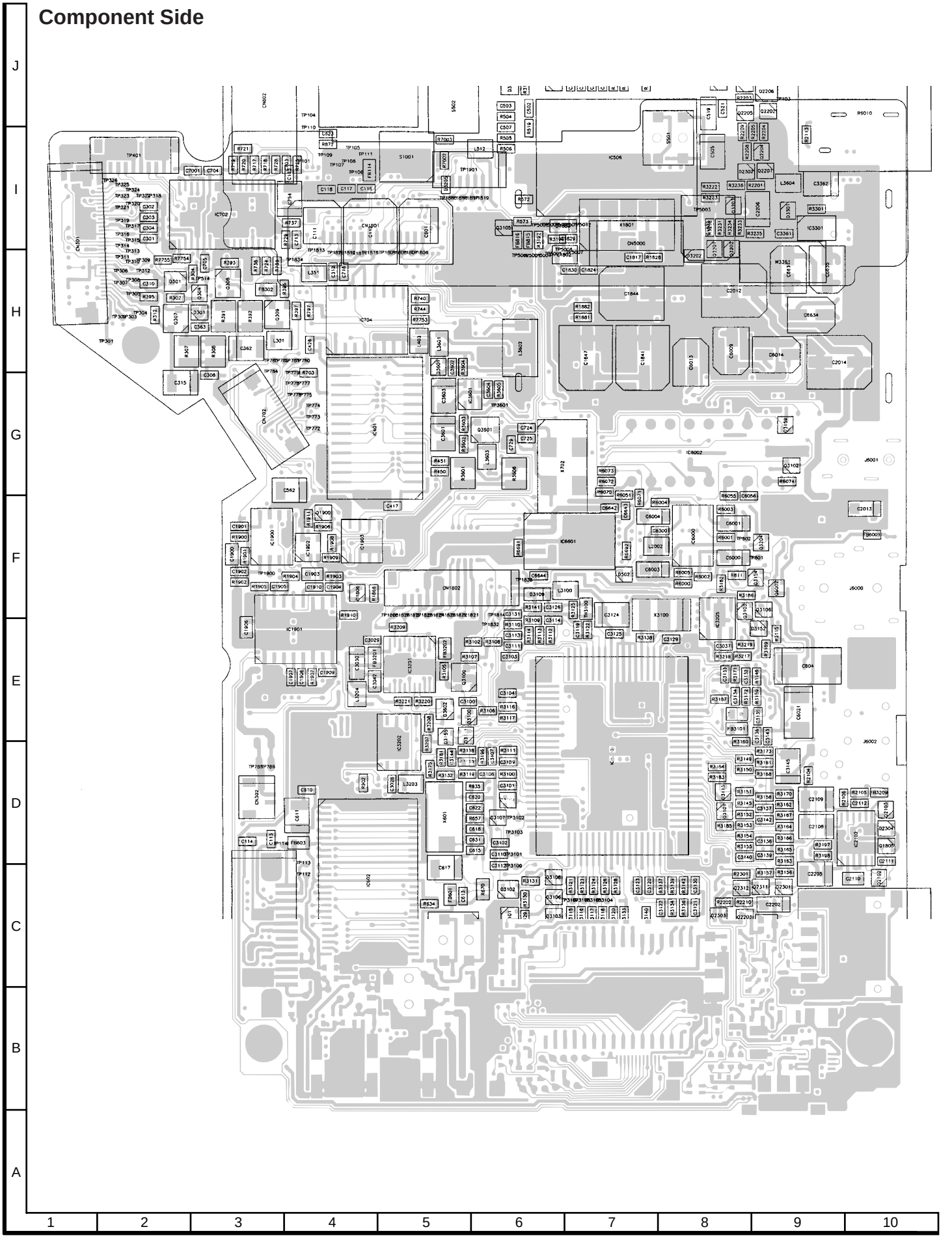
⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS

Note: It becomes Ref. NO. 90XX.



14. PRINTED WIRING BOARD ASSEMBLIES 14-1. MAIN PWB

Component Side

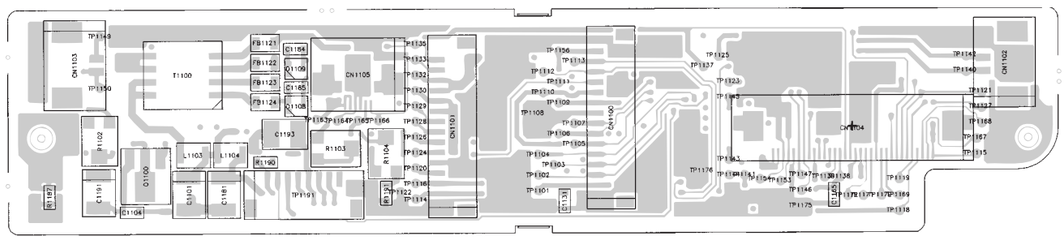


DV-L70S
DV-L70BL
DV-L70W

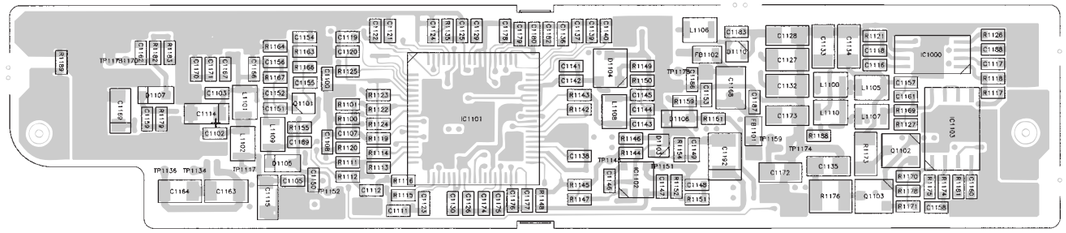
14-2. LCD/OPERATE PWB

LCD PWB

Component Side

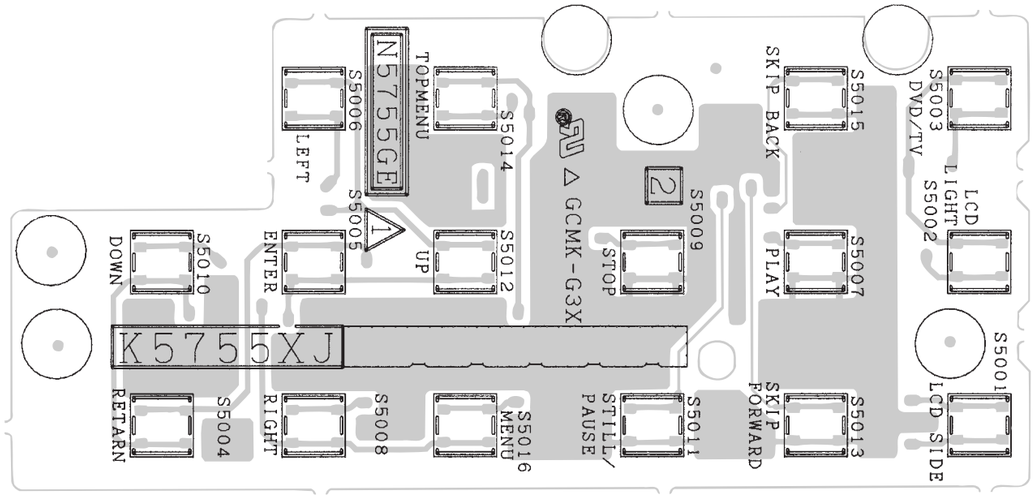


Wiring Side

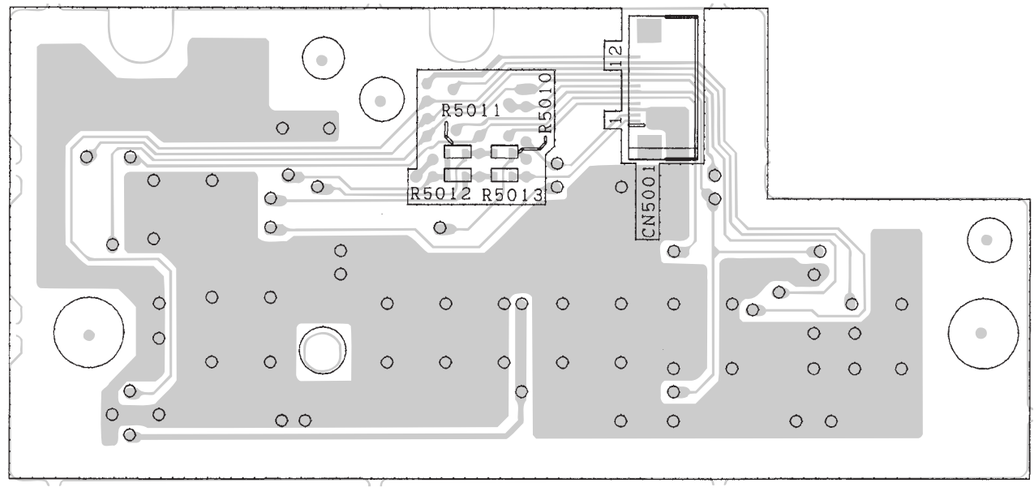


OPERATE PWB

Component Side



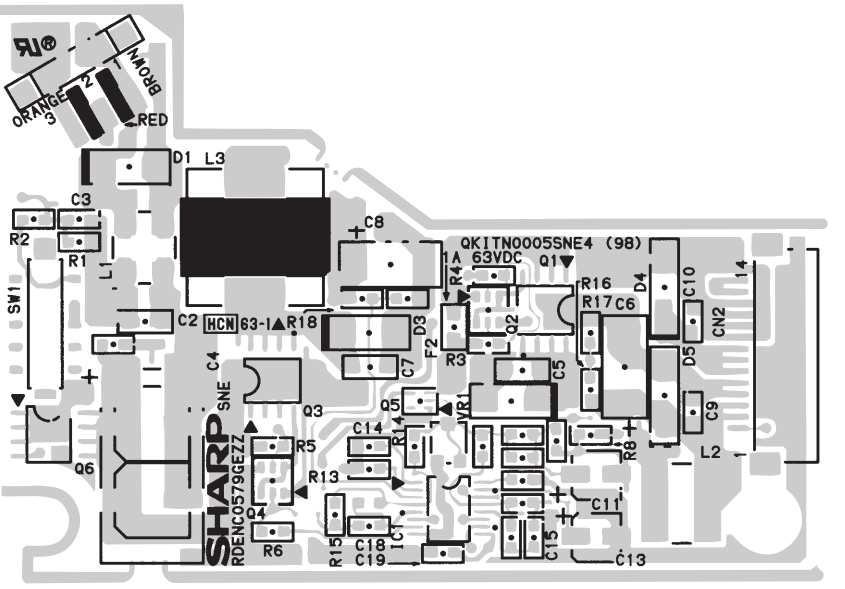
Wiring Side



14-3. POWER/INVERTER PWB

POWER PWB

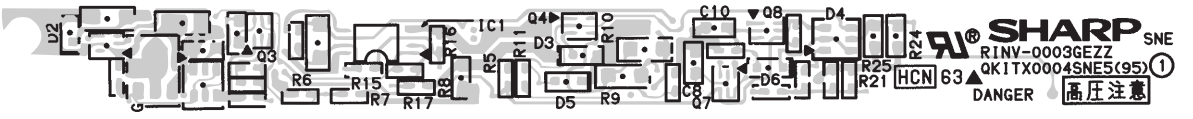
Note: It becomes Ref. NO. 90XX.



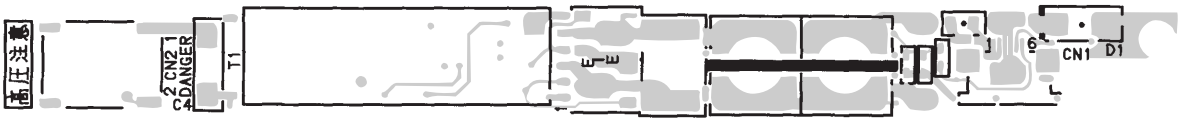
INVERTER PWB

Component Side

Note: It becomes Ref. NO. 99XX.



Wiring Side



15. REPLACEMENT PARTS LIST/ EXPLODED VIEWS

ELECTRICAL PARTS LIST

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

"HOW TO ORDER REPLACEMENT PARTS"

★MARK : SPARE PARTS-DELIVERY SECTION : ALL JAPAN

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER **2. REF. NO.**
3. PART NO. **4. DESCRIPTION**
5. PRICE CODE

⚠ **MARK: SAFETY RELATED PARTS**

PWB ASSEMBLY IS NOT REPLACEMENT ITEM

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

DUNTK5869KE50	Main PWB Unit	—
DUNTK5870KE50	LCD PWB Unit	—
DUNTK5755XJ6D	Operate PWB Unit	—

DUNTK5869KE50 MAIN PWB UNIT

INTEGRATED CIRCUITS

IC201	VHiMC44722A-1	MC44722A, Video Enc.	AX
IC303	RH-iX1517GEZZ	IX1517GE, RF Processor	AX
IC401	RH-iX1484GEZZ	IX1484GE, 4M DRAM	AU
IC402	RH-iX1474GEZZ	IX1474GE, DEM/ECC	BG
IC501	RH-iX1697GEZZ	IX1697GE, Flash Memory	AX
IC504	RH-iX1478GEZZ	IX1478GE, Micro Com.	BA
IC506	RH-iX1618GEZZ	IX1618GE, 1M SRAM	AR
IC512	RH-iX1535GEZZ	IX1535GE, Host I/F	AN
IC601	RH-iX1608GEZZ	IX1608GE, Source Decoder	BM
IC602	RH-iX0750TAZZ	IX0750TA, 16 SDRAM	AX
IC701	VHiAN8473NS-1	AN8473NS, Spin Driver	AN
IC702	VHiBA5933FP-1	BA5933FP	AM
IC703	VHi10324AFV-1	10324AFV	AF
IC704	RH-iX1531CEZZ	IX1531CE, Multiplexer	AF
IC707	RH-iX1473GEZZ	IX1473GE, Servo Processor	BA
IC801	VHiPCM1716E-1	PCM1716E	AV
IC901	RH-iX1516GEZZ	IX1516GE, Gamma S-P Tone	AV
IC1801	VHiiR3Y29BM-1	IR3Y29BM, LCD Decoder	AT
IC1900	VHiBA7046F/-1	BA7046F	AF
IC1901	VHiTHC221AF-1	THC221AF	AG
IC1902	VHiTC4S81F/-1	TC4S81F	AC
IC2101	VHiNJM2535V-1	NJM2535V, Input Video Selector	AE
IC2102	VHiTK15400/-1	TK15400	AK
IC2103	VHiTC4S66F/-1	TC4S66F, SW	AD
IC3200	RH-iX1625GEN2	IX1625GE	AT
IC3201	VHiMB8346BV-1	MB8346BV	AN
IC3202	VHiBR93L46F-1	BR93L46F	AG
IC3205	VHiS875045B-1	S875045B	AH
IC3301	VHiTC7W14U/-1	TC7W14U	AG
IC3601	VHiTK11835/-1	TK11835	AH
IC6000	VHiNJM4560M-1	NJM4560M, Audio Amp	AG
IC6002	VHiTDA7053/-1	TDA7053	AL
IC6202	VHiTC4053BF-1	TC4053BF, Multiplexer	AG
IC6203	VHiTC4053BF-1	TC4053BF, Multiplexer	AG
IC6601	VHiPQ20WZ11-1	PQ20WZ11, Batt Reg	AG
IC6602	VHiNJM4560M-1	NJM4560M, Audio Amp	AG

TRANSISTORS

Q112	VS2SA1774F/-1	2SA1774F	AA
Q115	VSFMMT717//-1	FMMT717	AE
Q118	VSFMMT717//-1	FMMT717	AE
Q121	VSDTA114EE/-1	DTA114EE	AB
Q122	VSFMMT717//-1	FMMT717	AE
Q123	VSFMMT717//-1	FMMT717	AE
Q201	VS2SC4738Y/-1	2SC4738Y	AA
Q202	VS2SA1576//-1	2SA1576	AB
Q203	VS2SC4738Y/-1	2SC4738Y	AA
Q204	VS2SA1576//-1	2SA1576	AB
Q211	VSDTC124EE/-1	DTC124EE	AA
Q301	VS2SA1576//-1	2SA1576	AB
Q304	VSDTC144EE/-1	DTC144EE	AA
Q307	VS2SA1298Y/-1	2SA1298Y	AB
Q308	VS2SA1298Y/-1	2SA1298Y	AB
Q309	VS2SA1298Y/-1	2SA1298Y	AB
Q701	VSDTA144EE/-1	DTA144EE	AA
Q702	VSDTC144EE/-1	DTC144EE	AA
Q705	VSDTC144EE/-1	DTC144EE	AA
Q1801	VS2SC4738Y/-1	2SC4738Y	AA
Q1803	VSDTC144EE/-1	DTC144EE	AA
Q1804	VSDTA144EE/-1	DTA144EE	AA
Q1805	VSDTA144EE/-1	DTA144EE	AA
Q1806	VSDTA144EE/-1	DTA144EE	AA
Q1807	VS2SA1576//-1	2SA1576	AB
Q1808	VS2SA1774F/-1	2SA1774F	AA
Q1900	VSDTA114YE/-1	DTA114YE	AB
Q2004	VSDTA114EE/-1	DTA114EE	AB
Q2005	VSDTA114EE/-1	DTA114EE	AB
Q2102	VSDTC114EE/-1	DTC114EE	AB
Q2103	VSDTA144EE/-1	DTA144EE	AA
Q2104	VSDTC114EE/-1	DTC114EE	AB
Q2201	VSDTA144EE/-1	DTA144EE	AA
Q2202	VSDTC144EE/-1	DTC144EE	AA
Q2203	VSDTC144EE/-1	DTC144EE	AA
Q2204	VS2SC4738Y/-1	2SC4738Y	AA
Q2205	VS2SC4738Y/-1	2SC4738Y	AA
Q2206	VS2SA1576//-1	2SA1576	AB
Q2311	VSDTC114EE/-1	DTC114EE	AB
Q2312	VSDTC114EE/-1	DTC114EE	AB
Q3102	VSDTA144EE/-1	DTA144EE	AA
Q3103	VS2SC4738Y/-1	2SC4738Y	AA
Q3201	VS2SC4738Y/-1	2SC4738Y	AA
Q3202	VS2SC4738Y/-1	2SC4738Y	AA
Q3203	VSDTA144EE/-1	DTA144EE	AA
Q3204	VSDTA144EE/-1	DTA144EE	AA
Q3601	VS2SA1362GR-1	2SA1362GR	AC
Q6000	VS2SD1306-E1E	2SD1306-E	AD
Q6001	VS2SD1306-E1E	2SD1306-E	AD
Q6002	VSDTA114EE/-1	DTA114EE	AB
Q6612	VS2SC4213B/-1	2SC4213B	AC
Q6613	VS2SC4213B/-1	2SC4213B	AC
Q6615	VS2SC4213B/-1	2SC4213B	AC
Q6616	VS2SC4213B/-1	2SC4213B	AC

DIODES

D112	VHDDAN222//-1	DAN222	AA
D301	VHDDAP222//-1	DAP222	AA
D501	VHDMA132K//-1	MA132K	AA
D502	VHDMA132K//-1	MA132K	AA
D1802	VHDDAN222//-1	DAN222	AA
D1803	VHDHVU17TRF-1	HVU17TRF	AE
D1807	VHDMA132K//-1	MA132K	AA
D2000	VHDMA132K//-1	MA132K	AA
D2002	VHDMA132K//-1	MA132K	AA
D2101	VHDMA716///-1	MA716	AC
D2102	VHDMA716///-1	MA716	AC
D2301	VHDDAP222//-1	DAP222	AA
D2302	VHDMA132K//-1	MA132K	AA

Ref. No.	Part No.	★	Description	Code
DUNTK5869KE50 MAIN PWB UNIT(Continued)				
D2303	VHDMA132K//-1		MA132K	AA
D3100	VHDDAN222//-1		DAN222	AA
D3101	VHDDA227///-1		DA227	AB
D3102	VHDDA227///-1		DA227	AB
D3103	VHDDAN222//-1		DAN222	AA
D3106	VHDDA221///-1		DA221	AB
D3107	VHDDA221///-1		DA221	AB
D3108	VHDDA221///-1		DA221	AB
D3109	VHDHVU17TRF-1		HVU17TRF	AE
D3113	VHDMA132K//-1		MA132K	AA
D3151	VHDMA132K//-1		MA132K	AA
D3152	VHDDAN222//-1		DAN222	AA
D3155	VHDDAP222//-1		DAP222	AA
D3159	VHDMA132K//-1		MA132K	AA
D3202	RH-PX0421CEZZ		PhotoDiode	AD
D3301	VHDMA132K//-1		MA132K	AA
D3601	VHDMA132K//-1		MA132K	AA
D3602	VHDDA227///-1		DA227	AB
D6001	VHDDAN222//-1		DAN222	AA
TH3100	RH-HZ0025CEZZ		Thermistor	AC
J6000	VHPGP1F562T-1		PhotoDiode	AQ
PACKAGED CIRCUITS				
X601	RCRSC0031GEZZ		Crystal, CRSC0031GE	AK
X702	RCRSC0035GEZZ		Crystal, CRSC0035GE	AG
X1801	RCRSC0096TAZZ		Crystal, CRSC0096TA	AL
FILTERS				
FL501	RFiLC0196GEZZ		Filter, FiLC0196GE	AE
X3100	RFiLC0201GEZZ		Filter, FiLC0201GE	AD
COILS				
L201	VPAWM100J2R6N		Peaking, 10µH	AC
L203	VPAWM270J3R9N		Peaking, 27µH	AC
L204	VPAWM270J3R9N		Peaking, 27µH	AC
L205	VPAWM270J3R9N		Peaking, 27µH	AC
L206	VPAWM270J3R9N		Peaking, 27µH	AC
L209	VPAWM470J6R4N		Peaking, 47µH	AC
L301	VPAWM100J2R6N		Peaking, 10µH	AC
L303	VPAWM100J2R6N		Peaking, 10µH	AC
L304	VPAWM100J2R6N		Peaking, 10µH	AC
L351	VPAWM100J2R6N		Peaking, 10µH	AC
L401	VPAWM470J6R4N		Peaking, 47µH	AC
L403	VPAWM470J6R4N		Peaking, 47µH	AC
L501	VPAWM470J6R4N		Peaking, 47µH	AC
L502	VPAWM1R0JR70N		Peaking, 1µH	AC
L511	VPAWM470J6R4N		Peaking, 47µH	AC
L512	VPAWM470J6R4N		Peaking, 47µH	AC
L701	VPAWM100J2R6N		Peaking, 10µH	AC
L801	VPAWM470J6R4N		Peaking, 47µH	AC
L1802	VPAWM330J4R4N		Peaking, 33µH	AC
L1803	VPAWM470J6R4N		Peaking, 47µH	AC
L1804	VPAWM470J6R4N		Peaking, 47µH	AC
L2001	VPAWM470J6R4N		Peaking, 47µH	AC
L2002	VPAWM470J6R4N		Peaking, 47µH	AC
L2202	VPAWM100J2R6N		Peaking, 10µH	AC
L3001	RCiLF0391TAZZ		Coil, CiLF0391TA	AG
L3002	RCiLF0391TAZZ		Coil, CiLF0391TA	AG
L3100	VPAWM470J6R4N		Peaking, 47µH	AC
L3203	VPAWM470J6R4N		Peaking, 47µH	AC
L3204	VPAWM470J6R4N		Peaking, 47µH	AC
L3601	VPAWM470J6R4N		Peaking, 47µH	AC
L3602	RCiLP0158GEZZ		Coil, 150µH	AE
L3603	VPAWM100J2R6N		Peaking, 10µH	AC
L3604	VPAWM470J6R4N		Peaking, 47µH	AC
L6001	RCiLF0391TAZZ		Coil, CiLF0391TA	AG
L6002	RCiLF0391TAZZ		Coil, CiLF0391TA	AG
CONTROL				
R6010	RVR-A4015GEZZ		Variable Resistor	AF

Ref. No.	Part No.	★	Description	Code
CAPACITORS				
C111	VCEAPF0GW227M		220 4V Electrolytic	AB
C112	VCEAPF0JW107M		100 6.3V Electrolytic	AC
C114	VCKYCY1CF104Z		0.1 16V Ceramic	AA
C115	VCKYCY1CF104Z		0.1 16V Ceramic	AA
C116	VCKYCY1CF104Z		0.1 16V Ceramic	AA
C117	VCKYCY1CF104Z		0.1 16V Ceramic	AA
C118	VCKYCY1CF104Z		0.1 16V Ceramic	AA
C201	VCSATE0JJ476M		47 6.3V Tantalum	AF
C202	VCKYCY1EB103K		0.01 25V Ceramic	AA
C203	VCSATE0JJ476M		47 6.3V Tantalum	AF
C204	VCCCCY1HH270J		27p 50V Ceramic	AA
C205	VCCCCY1HH560J		56p 50V Ceramic	AA
C206	VCCCCY1HH390J		39p 50V Ceramic	AA
C207	VCCCCY1HH150J		15p 50V Ceramic	AA
C208	VCKYCY1EB103K		0.01 25V Ceramic	AA
C210	VCKYCY1EB103K		0.01 25V Ceramic	AA
C211	VCCCCY1HH270J		27p 50V Ceramic	AA
C212	VCCCCY1HH560J		56p 50V Ceramic	AA
C213	VCCCCY1HH390J		39p 50V Ceramic	AA
C214	VCCCCY1HH150J		15p 50V Ceramic	AA
C216	VCKYCY1EB103K		0.01 25V Ceramic	AA
C219	VCSATE1AJ476M		47 10V Tantalum	AD
C220	VCKYCY1HF103Z		0.01 50V Ceramic	AA
C226	VCSATE1AJ476M		47 10V Tantalum	AD
C228	VCKYCY1HF103Z		0.01 50V Ceramic	AA
C229	VCSATA0JJ106M		10 6.3V Tantalum	AD
C230	VCKYCY1HF103Z		0.01 50V Ceramic	AA
C237	VCEA0A0JW477M		470 6.3V Electrolytic	AC
C238	VCEA0A0JW477M		470 6.3V Electrolytic	AC
C301	VCKYCY1AF105Z		1 10V Ceramic	AC
C302	VCKYCY1AF105Z		1 10V Ceramic	AC
C303	VCKYCY1AF105Z		1 10V Ceramic	AC
C304	VCKYCY1AF105Z		1 10V Ceramic	AC
C305	VCKYCY1CB104K		0.1 16V Ceramic	AB
C306	VCKYCY1CB104K		0.1 16V Ceramic	AB
C308	VCKYCY1EB103K		0.01 25V Ceramic	AA
C310	VCKYCY1AF105Z		1 10V Ceramic	AC
C312	VCKYCY1EB103K		0.01 25V Ceramic	AA
C315	VCSATE1AJ476M		47 10V Tantalum	AD
C331	VCKYCY1EB103K		0.01 25V Ceramic	AA
C332	VCKYCY1AF105Z		1 10V Ceramic	AC
C333	VCKYCY1CB104K		0.1 16V Ceramic	AB
C334	VCKYCY1CB104K		0.1 16V Ceramic	AB
C335	VCKYCY1HB472K		4700p 50V Ceramic	AA
C336	VCKYCY1HB472K		4700p 50V Ceramic	AA
C337	VCKYCY1CB104K		0.1 16V Ceramic	AB
C340	VCSATE1AJ226M		22 10V Tantalum	AD
C341	VCKYCY1CB104K		0.1 16V Ceramic	AB
C342	VCKYCY1CB104K		0.1 16V Ceramic	AB
C343	VCKYCY1CB104K		0.1 16V Ceramic	AB
C344	VCKYCY1HB102K		1000p 50V Ceramic	AA
C345	VCKYCY1HB102K		1000p 50V Ceramic	AA
C346	VCKYCY1AF105Z		1 10V Ceramic	AC
C351	VCKYCY1EB103K		0.01 25V Ceramic	AA
C353	VCSATE1AJ476M		47 10V Tantalum	AD
C354	VCKYCY1CB104K		0.1 16V Ceramic	AB
C355	VCSATE1AJ476M		47 10V Tantalum	AD
C362	VCSATE1AJ476M		47 10V Tantalum	AD
C363	VCKYCY1EB103K		0.01 25V Ceramic	AA
C371	VCKYCY1CB104K		0.1 16V Ceramic	AB
C372	VCSAPD0JJ225M		2.2 6.3V Tantalum	AD
C373	VCSATE1AJ476M		47 10V Tantalum	AD
C374	VCKYCY1CB104K		0.1 16V Ceramic	AB
C401	VCKYCY1HB471K		470p 50V Ceramic	AA
C402	VCSATE1AJ476M		47 10V Tantalum	AD
C404	VCKYCY1CB104K		0.1 16V Ceramic	AB
C405	VCSATE1AJ476M		47 10V Tantalum	AD
C406	VCCCCY1HH331J		330p 50V Ceramic	AA
C407	VCCCCY1HH331J		330p 50V Ceramic	AA
C408	VCKYCY1CB333K		0.033 16V Ceramic	AA
C409	VCKYCY1EB103K		0.01 25V Ceramic	AA
C410	VCCCCY1HH220J		22p 50V Ceramic	AA
C411	VCKYCY1AF105Z		1 10V Ceramic	AC
C412	VCKYCY1EB103K		0.01 25V Ceramic	AA

DUNTK5869KE50
MAIN PWB UNIT(Continued)

Ref. No.	Part No.	★		Description	Code
C413	VCKYCY1AF105Z	1	10V	Ceramic	AC
C414	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C415	VCKYCY1HB471K	470p	50V	Ceramic	AA
C416	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C417	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C418	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C419	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C420	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C421	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C424	VCCCCY1HH101J	100p	50V	Ceramic	AA
C426	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C427	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C428	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C429	VCSATE1AJ476M	47	10V	Tantalum	AD
C430	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C431	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C432	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C440	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C441	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C451	VCSATE1AJ476M	47	10V	Tantalum	AD
C452	VCSATE1AJ476M	47	10V	Tantalum	AD
C453	VCSATE1AJ476M	47	10V	Tantalum	AD
C454	VCSATE1AJ476M	47	10V	Tantalum	AD
C455	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C502	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C503	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C505	VCSATE0JJ476M	47	6.3V	Tantalum	AF
C506	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C507	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C511	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C512	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C513	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C517	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C519	VCSATA0JJ226M	22	6.3V	Tantalum	AD
C520	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C521	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C522	VCSATA1AJ106M	10	10V	Tantalum	AC
C524	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C530	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C531	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C532	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C550	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C551	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C552	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C553	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C561	VCKYCY1EB822K	8200p	25V	Ceramic	AA
C601	VCEAPF0GW227M	220	4V	Electrolytic	AB
C602	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C603	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C604	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C605	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C606	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C607	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C608	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C609	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C610	VCKYCY1AF105Z	1	10V	Ceramic	AC
C611	VCSATE0JJ476M	47	6.3V	Tantalum	AF
C612	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C613	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C614	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C615	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C616	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C617	VCSATE0JJ476M	47	6.3V	Tantalum	AF
C618	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C619	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C620	VCCCCY1HH1R0C	1p	50V	Ceramic	AA
C621	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C622	VCCCCY1HH6R0D	6p	50V	Ceramic	AA
C623	VCKYCY1AF105Z	1	10V	Ceramic	AC
C625	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C626	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C627	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C628	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C631	VCCCCY1HH0R5C	0.5p	50V	Ceramic	AA
C702	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C703	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C704	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C705	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C713	VCKYCY1HB332K	3300p	50V	Ceramic	AA
C716	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C718	VCKYCY1HB222K	2200p	50V	Ceramic	AA
C719	VCKYCY1HB332K	3300p	50V	Ceramic	AA
C720	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C721	VCKYCY1CB473K	0.047	16V	Ceramic	AA
C724	VCCCCY1HH100D	10p	50V	Ceramic	AA
C725	VCCCCY1HH9R0D	9p	50V	Ceramic	AA
C727	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C728	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C729	VCCCCY1HH101J	100p	50V	Ceramic	AA
C730	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C731	VCKYCY1HB472K	4700p	50V	Ceramic	AA
C733	VCKYCY1HB472K	4700p	50V	Ceramic	AA
C734	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C735	VCKYCY1CB473K	0.047	16V	Ceramic	AA
C736	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C737	VCCCCY1HH221J	220p	50V	Ceramic	AA
C738	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C739	VCKYCY1HB471K	470p	50V	Ceramic	AA
C740	VCCCCY1HH221J	220p	50V	Ceramic	AA
C741	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C742	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C743	VCKYCY1HB272K	2700p	50V	Ceramic	AA
C744	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C745	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C746	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C747	VCKYCY1EB153K	0.015	25V	Ceramic	AA
C748	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C749	VCCCCY1HH470J	47p	50V	Ceramic	AA
C751	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C752	VCKYCY1EB103K	0.01	25V	Ceramic	AA
C753	VCSATE0JJ476M	47	6.3V	Tantalum	AF
C754	VCSATE1AJ476M	47	10V	Tantalum	AD
C755	VCSATE1AJ476M	47	10V	Tantalum	AD
C758	VCSATE1DJ106M	10	20V	Tantalum	AD
C762	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C763	VCSATE1AJ476M	47	10V	Tantalum	AD
C764	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C766	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C767	VCSATE1AJ476M	47	10V	Tantalum	AD
C770	VCKYCY1HB222K	2200p	50V	Ceramic	AA
C774	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C775	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C776	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C801	VCSATA1AJ106M	10	10V	Tantalum	AC
C802	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C803	VCSATA1AJ106M	10	10V	Tantalum	AC
C804	VCSATD1AJ107M	100	10V	Tantalum	AF
C805	RC-KZ0162GEZZ	4700p			AB
C806	RC-KZ0162GEZZ	4700p			AB
C829	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C901	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C902	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C903	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C904	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C905	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C906	VCSATE1AJ476M	47	10V	Tantalum	AD
C1802	VCEAPF1AW476M	47	10V	Electrolytic	AB
C1803	RC-KZ0082TAZZ	1	10V		AC
C1804	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C1805	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C1806	VCCCCY1EH821J	820p	25V	Ceramic	AB
C1807	VCKYCY1AF105Z	1	10V	Ceramic	AC
C1808	VCKYCY1AF105Z	1	10V	Ceramic	AC
C1809	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C1810	VCKYCY1HF103Z	0.01	50V	Ceramic	AA
C1811	VCKYCY1AF105Z	1	10V	Ceramic	AC
C1812	VCKYCY1CF104Z	0.1	16V	Ceramic	AA

Ref. No.	Part No.	★	Description			Code
DUNTK5869KE50 MAIN PWB UNIT(Continued)						
C1813	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1814	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1815	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1816	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1817	VCCCCY1HH5R0C		5p	50V	Ceramic	AA
C1818	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1819	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1820	VCSATN1AJ225M		2.2	10V	Tantalum	AC
C1821	VCKYCY1CF474Z		0.47	16V	Ceramic	AB
C1822	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1823	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1824	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1825	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1826	VCCCCY1HH390J		39p	50V	Ceramic	AA
C1827	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1828	VCSATA1AJ106M		10	10V	Tantalum	AC
C1829	VCCCCY1HH270J		27p	50V	Ceramic	AA
C1830	VCCCCY1HH270J		27p	50V	Ceramic	AA
C1831	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1832	VCKYCY1HB681K		680p	50V	Ceramic	AA
C1833	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1834	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1836	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1837	VCKYCY1HF473Z		0.047	50V	Ceramic	AA
C1838	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C1839	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1840	VCSATA1AJ106M		10	10V	Tantalum	AC
C1841	VCSATD1AJ107M		100	10V	Tantalum	AF
C1842	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1843	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1844	VCEAPF0JW107M		100	6.3V	Electrolytic	AC
C1845	VCSATE1AJ476M		47	10V	Tantalum	AD
C1847	VCSATD1AJ107M		100	10V	Tantalum	AF
C1900	VCKYTV1CF105Z		1	16V	Ceramic	AB
C1901	VCKYCY1HB222K		2200p	50V	Ceramic	AA
C1902	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1903	VCKYTV1CF105Z		1	16V	Ceramic	AB
C1904	VCCCCY1HH331J		330p	50V	Ceramic	AA
C1905	VCCCCY1HH221J		220p	50V	Ceramic	AA
C1906	VCKYTV1CF105Z		1	16V	Ceramic	AB
C1907	VCCCCY1HH121J		120p	50V	Ceramic	AA
C1908	VCCCCY1HH121J		120p	50V	Ceramic	AA
C1909	VCCCCY1HH391J		390p	50V	Ceramic	AA
C2002	VCKYCY1AF105Z		1	10V	Ceramic	AC
C2012	VCEAPF0JW107M		100	6.3V	Electrolytic	AC
C2013	VCSATA1AJ106M		10	10V	Tantalum	AC
C2014	VCEAPF0JW107M		100	6.3V	Electrolytic	AC
C2104	RC-KZ0082TAZZ		1	10V		AC
C2108	VCSATE0JJ107M		100	6.3V	Tantalum	AE
C2109	VCSATE1AJ336M		33	10V	Tantalum	AG
C2110	RC-KZ0082TAZZ		1	10V		AC
C2111	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C2112	VCKYCY1CF473Z		0.047	16V	Ceramic	AA
C2113	RC-KZ0082TAZZ		1	10V		AC
C2201	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C2202	VCSATA0JJ106M		10	6.3V	Tantalum	AD
C2205	VCSATE1AJ476M		47	10V	Tantalum	AD
C2206	VCSATE1AJ476M		47	10V	Tantalum	AD
C2207	VCSATE1AJ476M		47	10V	Tantalum	AD
C3028	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C3029	VCKYCY1AF105Z		1	10V	Ceramic	AC
C3030	VCSATA0JJ226M		22	6.3V	Tantalum	AD
C3037	VCKYCY1EB223K		0.022	25V	Ceramic	AA
C3042	VCKYTV1EB104K		0.1	25V	Ceramic	AB
C3101	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3102	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3103	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3104	VCCCCY1HH221J		220p	50V	Ceramic	AA
C3107	VCCCCY1HH101J		100p	50V	Ceramic	AA
C3108	VCCCCY1HH101J		100p	50V	Ceramic	AA
C3109	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3110	VCCCCY1HH471J		470p	50V	Ceramic	AA

Ref. No.	Part No.	★	Description			Code
C3111	VCCCCY1HH221J		220p	50V	Ceramic	AA
C3112	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3113	VCCCCY1HH221J		220p	50V	Ceramic	AA
C3114	VCCCCY1HH221J		220p	50V	Ceramic	AA
C3115	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3116	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3117	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3118	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3119	VCCCCY1HH220J		22p	50V	Ceramic	AA
C3120	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3121	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C3122	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C3123	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C3124	VCSATE1AJ476M		47	10V	Tantalum	AD
C3125	VCKYCY1AF105Z		1	10V	Ceramic	AC
C3126	VCCCCY1HH470J		47p	50V	Ceramic	AA
C3129	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3130	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C3131	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C3132	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3133	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3134	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3135	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3136	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3137	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3138	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3139	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3140	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3142	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3143	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3144	VCCCCY1HH471J		470p	50V	Ceramic	AA
C3145	VCSATA1AJ106M		10	10V	Tantalum	AC
C3361	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C3362	VCSATE1AJ476M		47	10V	Tantalum	AD
C3601	VCSATE1AJ476M		47	10V	Tantalum	AD
C3602	VCKYCY1HB102K		1000p	50V	Ceramic	AA
C3603	VCSATE1AJ476M		47	10V	Tantalum	AD
C3604	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C6000	VCSATA1AJ106M		10	10V	Tantalum	AC
C6001	VCSATA1AJ106M		10	10V	Tantalum	AC
C6003	VCSATA1AJ106M		10	10V	Tantalum	AC
C6004	VCSATA1AJ106M		10	10V	Tantalum	AC
C6005	RC-KZ0161GEZZ		3900p			AB
C6006	RC-KZ0161GEZZ		3900p			AB
C6007	VCKYCY1AF105Z		1	10V	Ceramic	AC
C6008	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6009	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6010	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6011	VCKYCY1AF105Z		1	10V	Ceramic	AC
C6012	VCKYCY1AF105Z		1	10V	Ceramic	AC
C6013	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6014	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6021	VCSATJ0JJ107M		100	6.3V	Tantalum	AE
C6022	VCKYCY1EB103K		0.01	25V	Ceramic	AA
C6051	VCKYCY1AF105Z		1	10V	Ceramic	AC
C6052	VCKYCY1AF105Z		1	10V	Ceramic	AC
C6055	VCKYCY1EB223K		0.022	25V	Ceramic	AA
C6056	VCKYCY1EB223K		0.022	25V	Ceramic	AA
C6202	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C6203	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C6300	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C6630	VCKYCY1EB103K		0.01	25V	Ceramic	AA
C6631	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6632	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6633	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6634	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6635	VCEAPF1CW106M		10	16V	Electrolytic	AB
C6638	VCKYCY1CB683K		0.068	16V	Ceramic	AC
C6639	VCKYCY1CB683K		0.068	16V	Ceramic	AC
C6640	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6641	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C6642	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C6643	VCKYCY1HF103Z		0.01	50V	Ceramic	AA
C7001	VCKYCY1HB102K		1000p	50V	Ceramic	AA

DUNTK5869KE50
MAIN PWB UNIT(Continued)

RESISTORS

Ref. No.	Part No.	★	Description			Code
R113	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R114	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R119	VRS-TW2ED820J		82	1/4W	Metal Oxide	AB
R120	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R123	VRS-CY1JF153J		15k	1/16W	Metal Oxide	AA
R124	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R125	VRS-CY1JF122J		1.2k	1/16W	Metal Oxide	AA
R126	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R201	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R204	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R205	VRS-CY1JF392J		3.9k	1/16W	Metal Oxide	AA
R207	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R208	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R211	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R212	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R215	VRS-CY1JF271F		270	1/16W	Metal Oxide	AA
R217	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R218	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R219	VRS-CY1JF392J		3.9k	1/16W	Metal Oxide	AA
R221	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R222	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R224	VRS-CY1JF201F		200	1/16W	Metal Oxide	AA
R225	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R226	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R228	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R233	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R269	VRS-CY1JF182F		1.8k	1/16W	Metal Oxide	AA
R270	VRS-CY1JF152F		1.5k	1/16W	Metal Oxide	AA
R271	VRS-CY1JF152F		1.5k	1/16W	Metal Oxide	AA
R272	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R273	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R274	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R275	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R290	VRS-CY1JF220J		22	1/16W	Metal Oxide	AA
R302	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R304	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R307	VRS-TW2ED470J		47	1/4W	Metal Oxide	AA
R308	VRS-TW2ED470J		47	1/4W	Metal Oxide	AA
R312	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R329	VRS-CY1JF123J		12k	1/16W	Metal Oxide	AA
R330	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R331	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R332	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R350	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R352	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R353	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R354	VRS-CY1JF103F		10k	1/16W	Metal Oxide	AA
R355	VRS-CY1JF683F		68k	1/16W	Metal Oxide	AA
R369	VRS-CY1JF335J		3.3M	1/16W	Metal Oxide	AA
R391	VRS-TW2ED470J		47	1/4W	Metal Oxide	AA
R392	VRS-TW2ED470J		47	1/4W	Metal Oxide	AA
R393	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R394	VRS-CY1JF335J		3.3M	1/16W	Metal Oxide	AA
R395	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R396	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R397	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R401	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R402	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R403	VRS-CY1JF103F		10k	1/16W	Metal Oxide	AA
R404	VRS-CY1JF153F		15k	1/16W	Metal Oxide	AA
R405	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R406	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R409	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R412	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R413	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R414	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R416	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R417	VRS-CY1JF224J		220k	1/16W	Metal Oxide	AA
R418	VRS-CY1JF274J		270k	1/16W	Metal Oxide	AA
R419	VRS-CY1JF221J		220	1/16W	Metal Oxide	AA
R422	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R423	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R424	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R428	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R440	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R441	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R450	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R500	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R501	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R502	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R504	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R505	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R506	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R507	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R508	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R509	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R511	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R512	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R513	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R514	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R517	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R518	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R519	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R520	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R521	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R522	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R523	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R524	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R525	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R527	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R528	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R529	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R530	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R531	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R532	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R533	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R534	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R535	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R551	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R552	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R553	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R563	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R564	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R565	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R566	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R567	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R568	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R569	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R571	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R572	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R573	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R581	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R582	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R583	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R589	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R590	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R591	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R592	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R595	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R596	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R597	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R598	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R599	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R603	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R630	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R632	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R634	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R635	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R636	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R638	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R641	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R642	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R643	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R644	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R645	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R647	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA

DUNTK5869KE50
MAIN PWB UNIT(Continued)

Ref. No.	Part No.	★	Description			Code
R648	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R649	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R652	VRS-CY1JF560J		56	1/16W	Metal Oxide	AA
R653	VRS-CY1JF564J		560k	1/16W	Metal Oxide	AA
R654	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R657	VRS-CY1JF4R7J		4.7	1/16W	Metal Oxide	AA
R658	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R670	VRS-TV1JD100J		10	1/16W	Metal Oxide	AA
R701	VRS-TW2ED1R0J		1	1/4W	Metal Oxide	AB
R702	VRS-TW2ED1R0J		1	1/4W	Metal Oxide	AB
R703	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R704	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R709	VRS-TW2ED1R0J		1	1/4W	Metal Oxide	AB
R717	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R718	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R720	VRS-CY1JF123J		12k	1/16W	Metal Oxide	AA
R721	VRS-CY1JF821J		820	1/16W	Metal Oxide	AA
R724	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R725	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R728	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R729	VRS-CY1JF273J		27k	1/16W	Metal Oxide	AA
R733	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R737	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R738	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R740	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R741	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R742	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R744	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R756	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R758	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R760	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R761	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R768	VRS-CY1JF331J		330	1/16W	Metal Oxide	AA
R769	VRS-CY1JF331J		330	1/16W	Metal Oxide	AA
R771	VRS-CY1JF123J		12k	1/16W	Metal Oxide	AA
R772	VRS-CY1JF123J		12k	1/16W	Metal Oxide	AA
R774	VRS-CY1JF123J		12k	1/16W	Metal Oxide	AA
R778	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R779	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R781	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R782	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R786	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R789	VRS-CY1JF335J		3.3M	1/16W	Metal Oxide	AA
R790	VRS-CY1JF333J		33k	1/16W	Metal Oxide	AA
R791	VRS-CY1JF124J		120k	1/16W	Metal Oxide	AA
R793	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R794	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R795	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R796	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R797	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R801	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R802	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R811	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R819	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R820	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R821	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R822	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R831	VRS-CY1JF8R2J		8.2	1/16W	Metal Oxide	AA
R851	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R852	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R871	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R891	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R894	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R895	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R898	VRS-CY1JF824J		820k	1/16W	Metal Oxide	AA
R901	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R902	VRS-CY1JF220J		22	1/16W	Metal Oxide	AA
R903	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R904	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R905	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R906	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R907	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R908	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R909	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R910	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R911	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R912	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R918	VRS-CY1JF820J		82	1/16W	Metal Oxide	AA
R922	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R932	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R1801	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R1802	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R1803	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R1805	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R1806	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R1807	VRS-CY1JF333J		33k	1/16W	Metal Oxide	AA
R1809	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R1810	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R1811	VRS-CY1JF333J		33k	1/16W	Metal Oxide	AA
R1812	VRS-CY1JF683J		68k	1/16W	Metal Oxide	AA
R1813	VRS-CY1JF472F		4.7k	1/16W	Metal Oxide	AA
R1814	VRS-CY1JF272F		2.7k	1/16W	Metal Oxide	AA
R1815	VRS-CY1JF105J		1M	1/16W	Metal Oxide	AA
R1817	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R1818	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R1820	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1822	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1823	VRS-CY1JF392J		3.9k	1/16W	Metal Oxide	AA
R1824	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R1825	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1826	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R1827	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R1828	VRS-CY1JF122J		1.2k	1/16W	Metal Oxide	AA
R1829	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R1830	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1831	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1832	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R1833	VRS-CY1JF334J		330k	1/16W	Metal Oxide	AA
R1834	VRS-CY1JF334J		330k	1/16W	Metal Oxide	AA
R1835	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R1837	VRS-CY1JF562F		5.6k	1/16W	Metal Oxide	AA
R1838	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R1839	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R1840	VRS-CY1JF223F		22k	1/16W	Metal Oxide	AA
R1841	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1842	VRS-CY1JF106J		10M	1/16W	Metal Oxide	AA
R1843	VRS-CY1JF474J		470k	1/16W	Metal Oxide	AA
R1844	VRS-CY1JF685J		6.8M	1/16W	Metal Oxide	AA
R1847	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R1848	VRS-CY1JF273J		27k	1/16W	Metal Oxide	AA
R1850	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1851	VRS-CY1JF153J		15k	1/16W	Metal Oxide	AA
R1854	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R1856	VRS-CY1JF224J		220k	1/16W	Metal Oxide	AA
R1858	VRS-CY1JF683J		68k	1/16W	Metal Oxide	AA
R1859	VRS-CY1JF393J		39k	1/16W	Metal Oxide	AA
R1860	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R1863	VRS-CY1JF152J		1.5k	1/16W	Metal Oxide	AA
R1864	VRS-CY1JF152J		1.5k	1/16W	Metal Oxide	AA
R1865	VRS-CY1JF152J		1.5k	1/16W	Metal Oxide	AA
R1868	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R1871	VRS-CY1JF153J		15k	1/16W	Metal Oxide	AA
R1873	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1900	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R1901	VRS-CY1JF474F		470k	1/16W	Metal Oxide	AA
R1902	VRS-CY1JF134F		130k	1/16W	Metal Oxide	AA
R1903	VRS-CY1JF331J		330	1/16W	Metal Oxide	AA
R1904	VRS-CY1JF474J		470k	1/16W	Metal Oxide	AA
R1905	VRS-CY1JF223F		22k	1/16W	Metal Oxide	AA
R1906	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R1907	VRS-CY1JF104F		100k	1/16W	Metal Oxide	AA
R2011	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R2012	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R2104	VRS-CY1JF750J		75	1/16W	Metal Oxide	AA
R2105	VRS-CY1JF750J		75	1/16W	Metal Oxide	AA
R2106	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R2107	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA

DUNTK5869KE50
MAIN PWB UNIT(Continued)

Ref. No.	Part No.	★	Description			Code
R2111	VRS-CY1JF221J		220	1/16W	Metal Oxide	AA
R2113	VRS-CY1JF221J		220	1/16W	Metal Oxide	AA
R2201	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R2202	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R2203	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R2204	VRS-CY1JF682J		6.8k	1/16W	Metal Oxide	AA
R2205	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R2208	VRS-CY1JF181J		180	1/16W	Metal Oxide	AA
R2209	VRS-CY1JF750J		75	1/16W	Metal Oxide	AA
R2210	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R2301	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3100	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3102	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3112	VRS-CY1JF821J		820	1/16W	Metal Oxide	AA
R3113	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3114	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3115	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3116	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3117	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3118	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3119	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3121	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3122	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R3123	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3124	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3125	VRS-CY1JF182J		1.8k	1/16W	Metal Oxide	AA
R3126	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3129	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3130	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3131	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3132	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3133	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3137	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3138	VRS-CY1JF105J		1M	1/16W	Metal Oxide	AA
R3139	VRS-CY1JF272J		2.7k	1/16W	Metal Oxide	AA
R3140	VRS-CY1JF272J		2.7k	1/16W	Metal Oxide	AA
R3141	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3142	VRS-CY1JF105J		1M	1/16W	Metal Oxide	AA
R3145	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3146	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3149	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3150	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3151	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3152	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3153	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3154	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3155	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3156	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3157	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3158	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3159	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3160	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3161	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3162	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3163	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3164	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3165	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3166	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3167	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3168	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3170	VRS-CY1JF153J		15k	1/16W	Metal Oxide	AA
R3171	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3172	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3173	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R3181	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3182	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3183	VRS-CY1JF154J		150k	1/16W	Metal Oxide	AA
R3185	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3186	VRS-CY1JF683J		68k	1/16W	Metal Oxide	AA
R3187	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3190	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3192	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3194	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3195	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3196	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3197	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R3198	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R3203	VRS-TV1JF000J		0	1/16W	Metal Oxide	AA
R3204	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R3207	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R3208	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R3209	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3217	VRS-CY1JF243F		24k	1/16W	Metal Oxide	AA
R3218	VRS-CY1JF153F		15k	1/16W	Metal Oxide	AA
R3219	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R3220	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R3221	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R3222	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R3223	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R3231	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3232	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3233	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3234	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3235	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3236	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R3301	VRS-CY1JF750J		75	1/16W	Metal Oxide	AA
R3601	VRS-TW2ED1R5J		1.5	1/4W	Metal Oxide	AB
R3602	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R3603	VRS-CY1JF221J		220	1/16W	Metal Oxide	AA
R3604	VRS-CY1JF154J		150k	1/16W	Metal Oxide	AA
R3605	VRS-CY1JF433J		43k	1/16W	Metal Oxide	AA
R3606	VRS-TW2ED1R5J		1.5	1/4W	Metal Oxide	AB
R6000	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R6001	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R6002	VRS-CY1JF474J		470k	1/16W	Metal Oxide	AA
R6003	VRS-CY1JF474J		470k	1/16W	Metal Oxide	AA
R6004	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R6005	VRS-CY1JF183J		18k	1/16W	Metal Oxide	AA
R6006	VRS-CY1JF821J		820	1/16W	Metal Oxide	AA
R6007	VRS-CY1JF821J		820	1/16W	Metal Oxide	AA
R6008	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R6009	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R6012	VRS-CY1JF272J		2.7k	1/16W	Metal Oxide	AA
R6013	VRS-CY1JF272J		2.7k	1/16W	Metal Oxide	AA
R6015	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R6016	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R6051	VRS-CY1JF182J		1.8k	1/16W	Metal Oxide	AA
R6052	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6053	VRS-CY1JF152J		1.5k	1/16W	Metal Oxide	AA
R6054	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R6055	VRS-CY1JF182J		1.8k	1/16W	Metal Oxide	AA
R6056	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6057	VRS-CY1JF152J		1.5k	1/16W	Metal Oxide	AA
R6058	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R6060	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R6061	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R6062	VRS-CY1JF562J		5.6k	1/16W	Metal Oxide	AA
R6063	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R6064	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R6066	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R6070	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R6071	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R6090	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6091	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6210	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6212	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6213	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6214	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6617	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6621	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6622	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R6623	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R6660	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R6661	VRS-CY1JF151J		150	1/16W	Metal Oxide	AA
R6662	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R6663	VRS-CY1JF472J		4.7k	1/16W	Metal Oxide	AA
R6664	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code

DUNTK5869KE50
MAIN PWB UNIT(Continued)

R6665	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6683	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R6684	VRS-CY1JF822J		8.2k	1/16W	Metal Oxide	AA
R6685	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6686	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6687	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6688	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R6689	VRS-CY1JF104J		100k	1/16W	Metal Oxide	AA
R6691	VRS-CY1JF122J		1.2k	1/16W	Metal Oxide	AA
R6692	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R6694	VRS-CY1JF474J		470k	1/16W	Metal Oxide	AA
R6695	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R7001	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7007	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA
R7019	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7020	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R7021	VRS-CY1JF682J		6.8k	1/16W	Metal Oxide	AA
R7022	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7023	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7024	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7026	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA
R7042	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7050	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R7754	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R9193	VRS-CY1JF223J		22k	1/16W	Metal Oxide	AA

MISCELLANEOUS PARTS

CN301	QSOCN3087TAZZ	Socket, 30Pin	AF
CN302	QPLGN0276TAZZ	Plug, 2Pin	AD
CN702	QSOCN1372TAZZ	Socket, 13Pin	AD
CN802	QSOCN1436TAZZ	Socket, 14Pin	AE
CN1801	QPLGN1476TAZZ	Plug, 14Pin	AG
CN1802	QPLGN1476TAZZ	Plug, 14Pin	AG
CN5000	QSOCN1286TAZZ	Socket, 12Pin	AD
FB101	RBLN-0055TAZZ	Balun, BLN-0055TA	AB
FB102	RBLN-0055TAZZ	Balun, BLN-0055TA	AB
FB103	RBLN-0055TAZZ	Balun, BLN-0055TA	AB
FB114	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB201	RBLN-0071TAZZ	Balun, BLN-0071TA	AB
FB302	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB402	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB404	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB551	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB601	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB603	RBLN-0071TAZZ	Balun, BLN-0071TA	AB
FB701	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB702	RBLN-0071TAZZ	Balun, BLN-0071TA	AB
FB802	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB804	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB815	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB816	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3100	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB3101	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB3201	RBLN-0052TAZZ	Balun, BLN-0052TA	AC
FB3202	RBLN-0071TAZZ	Balun, BLN-0071TA	AB
FB3206	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3207	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3208	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3209	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3210	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB3212	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB6001	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
FB6002	RBLN-0056TAZZ	Balun, BLN-0056TA	AC
J6001	QJAKE0263GEZZ	Jack	AE
J6002	QJAKE0062TAZZ	Jack	AF
R624	RBLN-0006TAZZ	Balun, BLN-0006TA	AB
R872	RBLN-0071TAZZ	Balun, BLN-0071TA	AB
S501	QSW-M0024TAZZ	Switch, LCD	AE
S502	QSW-M0024TAZZ	Switch, LD	AE
S1001	QSW-M0024TAZZ	Switch, Tray	AE
TP401	QPLGN0876TAZZ	Plug, 8Pin	AE
TP1901	QPLGN0676TAZZ	Plug, 6Pin	AE

Ref. No.	Part No.	★	Description	Code
W3361	RRMCU0012TAZZ		Remote Receiver	AL

DUNTK5870KE50
LCD PWB UNIT

INTEGRATED CIRCUITS

IC1000	VHiMB3800PV-1	MB3800PV	AL
IC1101	VHiLZ9GJ19+-1	LZ9GJ19	AQ
IC1102	VHiNJM2107F-1	NJM2107F	AE
IC1103	VHiNJM4560M-1	NJM4560M	AG

TRANSISTORS

Q1100	VS2SD999LK/-1	2SD999LK	AC
Q1101	VS2SC4738Y/-1	2SC4738Y	AA
Q1102	VS2SC2411KR-1	2SC2411KR	AC
Q1103	VS2SA1036KR-1	2SA1036KR	AC

DIODES

D1103	VHDMA132K//-1	MA132K	AA
D1104	VHDMA716///-1	MA716	AC
D1105	VHDHVU200A/-1	HVU200A	AC
D1106	RH-EX0852CEZZ	Zener, EX0852CE	AC
D1107	RH-EX0852CEZZ	Zener, EX0852CE	AC
D1108	VHDMA132K//-1	MA132K	AA
D1109	VHDMA132K//-1	MA132K	AA
D1110	VHDMA132K//-1	MA132K	AA

COILS AND TRANSFORMER

L1101	VPAWM2R7J1R2N	Peaking, 2.7µH		AC
L1102	VPAWM2R7J1R2N	Peaking, 2.7µH		AC
L1103	VPAWM4R7J1R7N	Peaking, 4.7µH		AC
L1104	VPAWM470J6R4N	Peaking, 47µH		AC
L1105	VPAWM470J6R4N	Peaking, 47µH		AC
L1106	VPAWM470J6R4N	Peaking, 47µH		AC
L1107	VPAWM470J6R4N	Peaking, 47µH		AC
L1108	VPAWM150J3R2N	Peaking, 15µH		AC
L1109	VPAWM2R7J1R2N	Peaking, 2.7µH		AC
⚠ T1100	RTRNZ0127GEZZ	Transformer		AF

CONTROLS

R1102	RVR-M7951TAZZ	Variable Resistor	AC
R1103	RVR-M7959TAZZ	Variable Resistor	AC
R1104	RVR-M7949TAZZ	Variable Resistor	AC

CAPACITORS

C1100	VCCCCY1HH101J	100p	50V	Ceramic	AA
C1101	VCSATE1AJ476M	47	10V	Tantalum	AD
C1102	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1103	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1104	VCKYCY1CB104K	0.1	16V	Ceramic	AB
C1105	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1107	VCKYCY1HB103K	0.01	50V	Ceramic	AA
C1108	VCKYCY1HB103K	0.01	50V	Ceramic	AA
C1111	VCKYCY1HB561K	560p	50V	Ceramic	AA
C1112	VCKYCY1HB561K	560p	50V	Ceramic	AA
C1114	VCSATA1AJ106M	10	10V	Tantalum	AC
C1115	VCSATA1AJ106M	10	10V	Tantalum	AC
C1116	VCKYCY1CF224Z	0.22	16V	Ceramic	AA
C1117	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1118	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C1119	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1120	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1121	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1122	VCCCCY1HH820J	82p	50V	Ceramic	AA
C1123	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1124	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1125	VCKYCY1CF224Z	0.22	16V	Ceramic	AA
C1126	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1127	RC-KZ0052TAZZ	4.7	16V		AC
C1128	RC-KZ0046TAZZ	4.7	35V		AD
C1129	VCKYCY1CF104Z	0.1	16V	Ceramic	AA
C1130	VCKYCY1CF104Z	0.1	16V	Ceramic	AA

Ref. No.	Part No.	★	Description			Code
DUNTK5870KE50 LCD PWB UNIT(Continued)						
C1131	VCCCCY1HH330J		33p	50V	Ceramic	AA
C1132	RC-KZ0052TAZZ		4.7	16V		AC
C1133	RC-KZ0052TAZZ		4.7	16V		AC
C1134	RC-KZ0052TAZZ		4.7	16V		AC
C1135	RC-KZ0046TAZZ		4.7	35V		AD
C1136	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1137	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1138	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1139	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1140	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1141	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1142	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1143	VCCCCY1HH330J		33p	50V	Ceramic	AA
C1144	VCCCCY1HH330J		33p	50V	Ceramic	AA
C1145	VCKYCY1HB102K		1000p	50V	Ceramic	AA
C1146	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1147	VCKYCY1HB561K		560p	50V	Ceramic	AA
C1148	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1149	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1150	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1151	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1152	VCKYCY1HB102K		1000p	50V	Ceramic	AA
C1153	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1154	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1155	VCCCCY1HH221J		220p	50V	Ceramic	AA
C1156	VCCCCY1HH271J		270p	50V	Ceramic	AA
C1157	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1158	VCKYCY1EF104Z		0.1	25V	Ceramic	AA
C1159	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1160	VCKYCY1EF104Z		0.1	25V	Ceramic	AA
C1161	VCKYCY1CF474Z		0.47	16V	Ceramic	AB
C1162	VCKYCY1EF104Z		0.1	25V	Ceramic	AA
C1163	RC-KZ0084TAZZ		1	25V		AC
C1164	RC-KZ0084TAZZ		1	25V		AC
C1165	VCCCCY1HH330J		33p	50V	Ceramic	AA
C1166	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1167	VCKYCY1AF105Z		1	10V	Ceramic	AC
C1169	VCSATA1EJ105M		1	25V	Tantalum	AC
C1170	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1171	VCKYCY1CF104Z		0.1	16V	Ceramic	AA
C1174	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1175	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1176	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1177	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1178	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1179	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1180	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1181	VCSATE1AJ476M		47	10V	Tantalum	AD
C1182	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1183	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1184	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1185	VCCCCY1HH101J		100p	50V	Ceramic	AA
C1186	VCKYCY1CF334Z		0.33	16V	Ceramic	AA
C1187	VCKYCY1CF334Z		0.33	16V	Ceramic	AA
C1188	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C1189	VCCCCY1HH100D		10p	50V	Ceramic	AA
C1191	VCSATE1AJ476M		47	10V	Tantalum	AD
C1192	VCSATE1CJ226M		22	16V	Tantalum	AE
RESISTORS						
R1101	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1111	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1112	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1113	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1114	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1115	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1116	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1117	VRS-CY1JF273J		27k	1/16W	Metal Oxide	AA
R1118	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R1119	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1120	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1121	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R1122	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1123	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1124	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1125	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
R1126	VRS-CY1JF221J		220	1/16W	Metal Oxide	AA
R1135	VRS-CY1JF224J		220k	1/16W	Metal Oxide	AA
R1142	VRS-CY1JF105J		1M	1/16W	Metal Oxide	AA
R1143	VRS-CY1JF391J		390	1/16W	Metal Oxide	AA
R1144	VRS-CY1JF562F		5.6k	1/16W	Metal Oxide	AA
R1145	VRS-CY1JF473J		47k	1/16W	Metal Oxide	AA
R1146	VRS-CY1JF392J		3.9k	1/16W	Metal Oxide	AA
R1147	VRS-CY1JF683J		68k	1/16W	Metal Oxide	AA
R1148	VRS-CY1JF273J		27k	1/16W	Metal Oxide	AA
R1149	VRS-CY1JF564J		560k	1/16W	Metal Oxide	AA
R1150	VRS-CY1JF564J		560k	1/16W	Metal Oxide	AA
R1151	VRS-CY1JF683J		68k	1/16W	Metal Oxide	AA
R1152	VRS-CY1JF105J		1M	1/16W	Metal Oxide	AA
R1154	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1155	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R1159	VRS-CY1JF102J		1k	1/16W	Metal Oxide	AA
R1161	VRS-CY1JF222J		2.2k	1/16W	Metal Oxide	AA
R1163	VRS-CY1JF272J		2.7k	1/16W	Metal Oxide	AA
R1164	VRS-CY1JF332J		3.3k	1/16W	Metal Oxide	AA
R1166	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1167	VRS-CY1JF331J		330	1/16W	Metal Oxide	AA
R1169	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R1170	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1171	VRS-CY1JF101J		100	1/16W	Metal Oxide	AA
R1173	VRS-TQ2BD100J		10	1/8W	Metal Oxide	AA
R1174	VRS-CY1JF221F		220	1/16W	Metal Oxide	AA
R1175	VRS-CY1JF221F		220	1/16W	Metal Oxide	AA
R1176	VRS-TW2ED220J		22	1/4W	Metal Oxide	AB
R1178	VRS-CY1JF221F		220	1/16W	Metal Oxide	AA
R1179	VRS-CY1JF103J		10k	1/16W	Metal Oxide	AA
R1181	VRS-CY1JF100J		10	1/16W	Metal Oxide	AA
R1182	VRS-CY1JF273J		27k	1/16W	Metal Oxide	AA
R1183	VRS-CY1JF333J		33k	1/16W	Metal Oxide	AA
R1187	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1188	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1189	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1190	VRS-CY1JF000J		0	1/16W	Metal Oxide	AA
R1191	VRS-CY1JF561J		560	1/16W	Metal Oxide	AA
MISCELLANEOUS PARTS						
CN1100	QPLGN1476TAZZ		Plug, 14Pin			AG
CN1101	QPLGN1476TAZZ		Plug, 14Pin			AG
CN1102	QPLGN0263TAZZ		Plug, 2Pin			AB
CN1103	QPLGN0263TAZZ		Plug, 2Pin			AB
CN1104	QSOCN3272TAZZ		Socket, 32Pin			AF
CN1105	QSOCN0686TAZZ		Socket, 6Pin			AC
FB1101	RBLN-0053TAZZ		Balun, BLN-0053TA			AB
FB1102	RBLN-0053TAZZ		Balun, BLN-0053TA			AB
FB1121	RBLN-0052TAZZ		Balun, BLN-0052TA			AC
FB1122	RBLN-0052TAZZ		Balun, BLN-0052TA			AC
FB1123	RBLN-0052TAZZ		Balun, BLN-0052TA			AC
FB1124	RBLN-0052TAZZ		Balun, BLN-0052TA			AC
TP1191	QPLGN0876TAZZ		Plug, 8Pin			AE
DUNTK5755XJ6D OPERATE PWB UNIT						
DIODES						
D5001	VHDDA221///-1		DA221			AB
D5002	VHDDA221///-1		DA221			AB
D5003	VHDDA221///-1		DA221			AB
D5004	VHDDA221///-1		DA221			AB
RESISTORS						
R5010	VRS-CY1JF122J		1.2k	1/16W	Metal Oxide	AA
R5011	VRS-CY1JF821J		820	1/16W	Metal Oxide	AA
R5012	VRS-CY1JF681J		680	1/16W	Metal Oxide	AA
R5013	VRS-CY1JF471J		470	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code

DUNTK5755XJ6D
OPERATE PWB UNIT(Continued)

MISCELLANEOUS PARTS

CN5001	QSOCN1286TAZZ	Socket, 12Pin	AD
S5001	QSW-K0096TAZZ	Switch, LCD Size	AC
S5002	QSW-K0096TAZZ	Switch, LCD Light	AC
S5003	QSW-K0096TAZZ	Switch, DVD/TV	AC
S5004	QSW-K0096TAZZ	Switch, Retarn	AC
S5005	QSW-K0096TAZZ	Switch, Enter	AC
S5006	QSW-K0096TAZZ	Switch, Left	AC
S5007	QSW-K0096TAZZ	Switch, Play	AC
S5008	QSW-K0096TAZZ	Switch, Right	AC
S5009	QSW-K0096TAZZ	Switch, Stop	AC
S5010	QSW-K0096TAZZ	Switch, Down	AC
S5011	QSW-K0096TAZZ	Switch, Still/Pause	AC
S5012	QSW-K0096TAZZ	Switch, Up	AC
S5013	QSW-K0096TAZZ	Switch, Skip/Forward	AC
S5014	QSW-K0096TAZZ	Switch, Top Menu	AC
S5015	QSW-K0096TAZZ	Switch, Skip Back	AC
S5016	QSW-K0096TAZZ	Switch, Menu	AC

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

⚠	QACCB0016TAZZ	AC Power Cord(L70S/W)	AV
⚠	QACCK0002TAZZ	AC Power Cord	AM
	QCNW-8340GEZZ	S-Video/Video Cord	AS
	QCNW-8341GEZZ	Audio Cord	AP
	RPHOH0001GEZZ	Earphone	AP
	RRMCG1225GESA	Remote Control Unit(L70S)	AT
	RRMCG1225GESB	Remote Control Unit (L70BL/W)	AV
	TiNS-3709GEZZ	Operation Manual(L70S/BL)	AY
	TiNS-3710GEZZ	Operation Manual(L70S/BL)	AY
	TiNS-3713GEZZ	Operation Manual(L70W)	BA
	TiNS-3766GEZZ	Operation Manual	AF
⚠	UADP-0195GEZZ	AC Adapter	BK
	UBATU0243GEZZ	Battery	AE
	93GHR22172002	Battery Cover(L70S)	
	93GHR22172004	Battery Cover(L70BL/W)	

PACKING PARTS
(NOT REPLACEMENT ITEM)

SPAKC4296GEZZ	Packing Case(L70BL)	—
SPAKC4297GEZZ	Packing Case(L70S)	—
SPAKC4298GEZZ	Packing Case(L70W)	—
SPAKF0195GEZZ	Packing Material	—
SPAKF0202GEZZ	Packing Material (L70S/BL)	—
SPAKL0047CEZZ	Stopper	—
SPAKP0186GEZZ	Wrapping Paper	—
SPAKX1065GEZZ	Packing Add.	—
SPAKX1066GEZZ	Packing Add.	—
SSAKA0100TAZZ	Polystylene Bag, Accessories(L70W)	—
SSAKA0170CEZZ	Polystylene Bag, Accessories(L70S/BL)	—

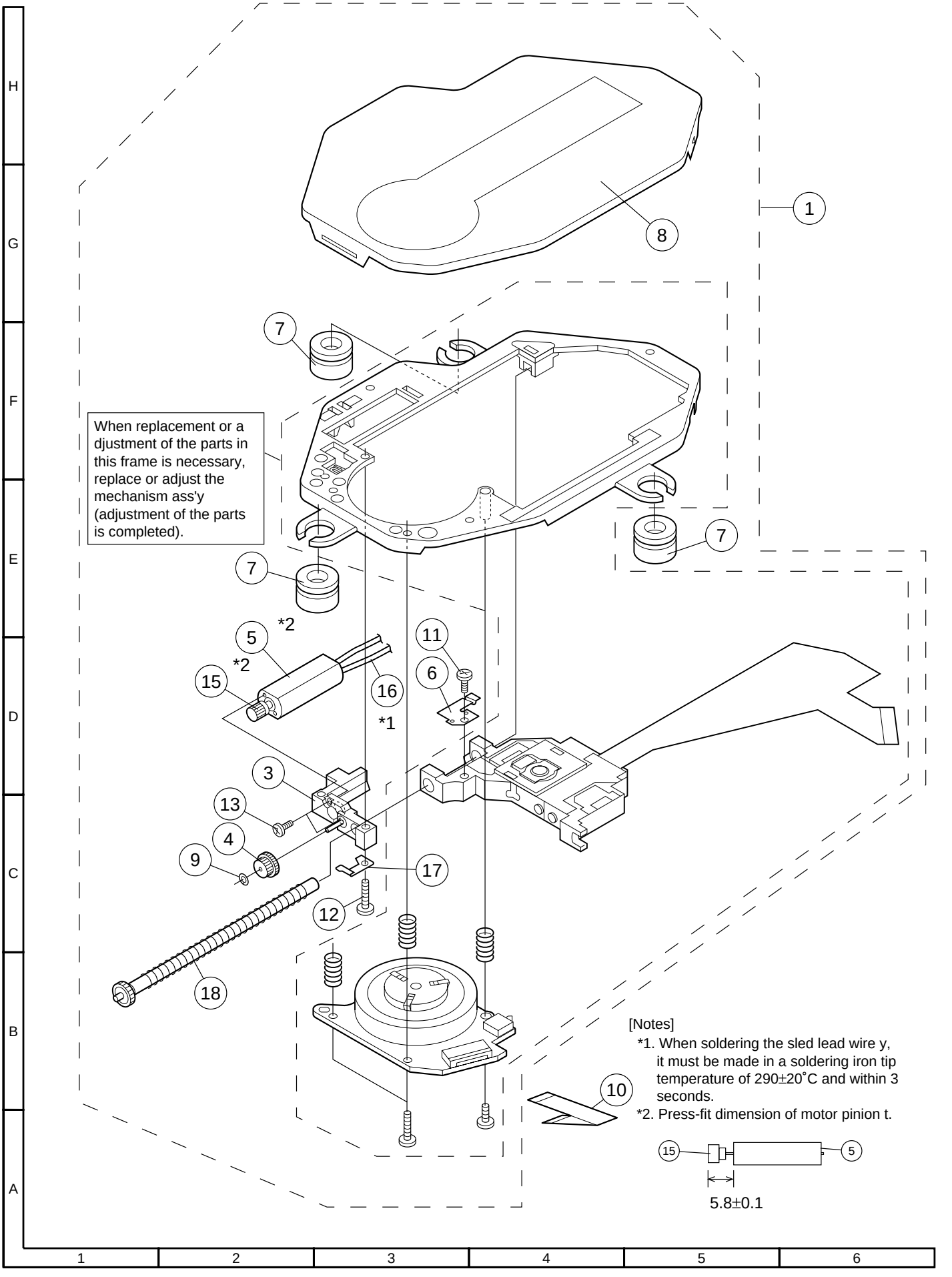
MECHANISM PARTS

1	DMECD0004GE01	Mechanism Ass'y	—
3	LHLDZ2070GEZZ	Sled Unit	AD
4	NGERH1328GEZZ	Intermediate Gear	AC
5	RMOTV1037GEZZ	Sled Motor	AN
6	MSPRP0199GEZZ	Grip Spring	AC
7	PCUSG0004GEZZ	Insulator	AC
8	PCOVP3021GEZZ	PU Cover	AF
9	LX-WZ1053GE00	Cut Washer	AA
10	QCNW-8097GEZZ	Spindle Motor FFC	AE
11	XAPSF17P03000	Screw M1.7 X L3	AA
12	XAPSN17P06000	Screw M1.7 X L6 Ni Plating	AB
13	LX-BZ3220GEFF	Screw M1.2 X L2.7	AB
15	NGERH1329GEZZ	Motor Pinion	AC
16	QCNW-8081GEZZ	Sled Lead Wire	AE
17	MSPRP1217GEZZ	Earth Spring	AD
18	NSFTD0063GEZZ	Main Guide Ass'y	

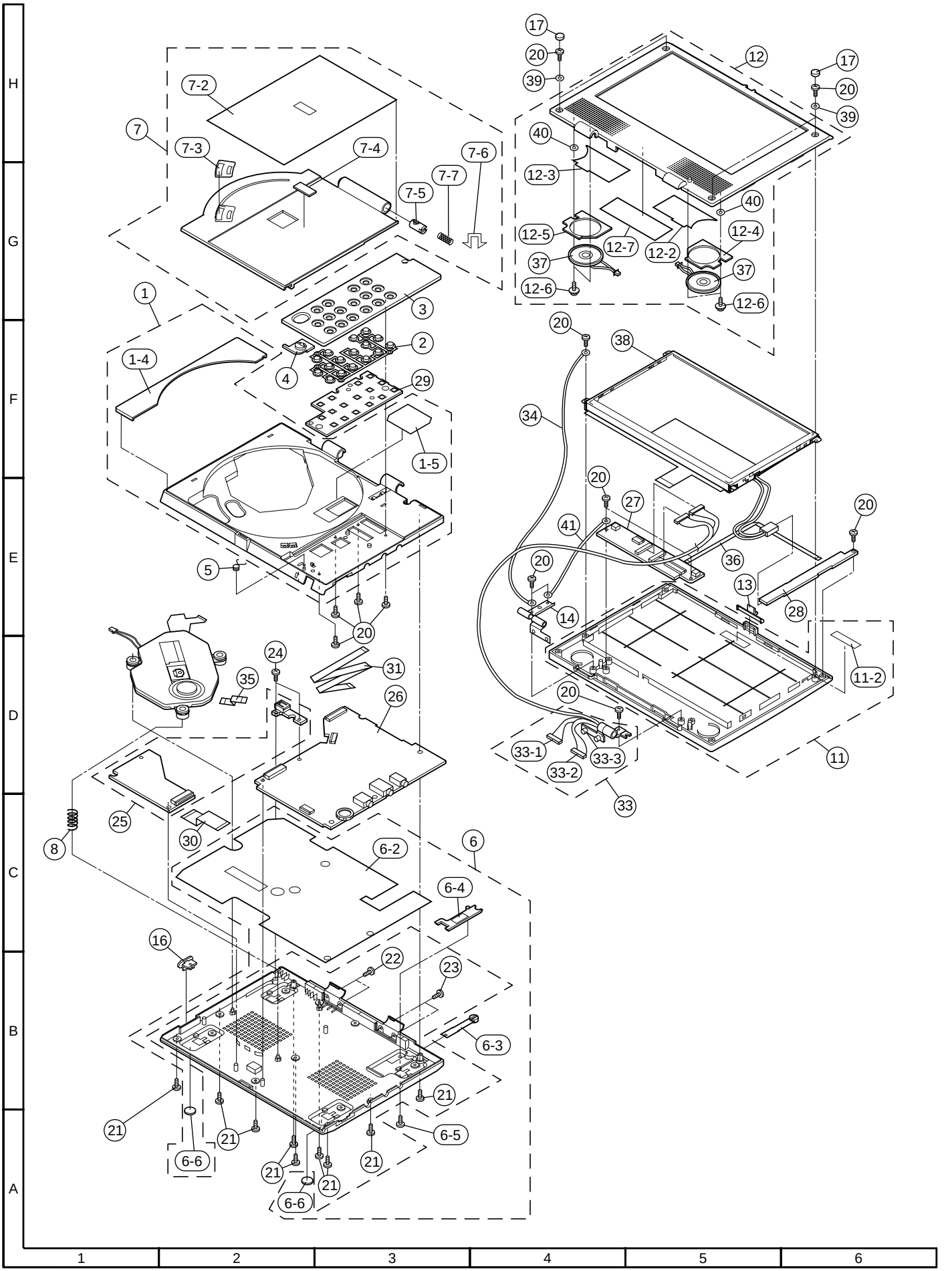
CABINET PARTS

Ref. No.	Part No.	★	Description	Code
1	CCABA1113GE01		Cabinet A Ass'y (Main Unit, Upper)(L70S)	BA
1	CCABA1113GE02		Cabinet A Ass'y (Main Unit, Upper)(L70BL/W)	BB
1-4	HDECQ2105GESA		Disc Decoration Panel	AN
1-5	TLABS0421GEZZ		Laser Caution Label	AD
2	JBTN-2989GESA		Key Tree	AP
3	CPNLC2696GE01		Operation Panel Ass'y	AR
4	JBTN-2990GESA		Open Button	AE
5	MSPRD0198GEZZ		Lock Release SPR	AC
6	CCABB1226GE01		Cabinet B Ass'y (Main Unit, Lower)(L70S)	AZ
6	CCABB1226GE02		Cabinet B Ass'y (Main Unit, Lower)(L70BL/W)	AZ
6-2	PZETK0012GEZZ		Main PWB Isolating Sheet	AL
6-3	GLEGM9055CESC		Stand	AF
6-4	LHLDZ1718CEZZ		Stand Holder	AC
6-5	LX-HZ3111CEFN		M1.7-4B Tight Screw (L70S)	AB
6-5	LX-HZ3090CEFF		M1.7-4B Tight Screw (L70BL/W)	AA
6-6	PGUMM0059GEZZ		Stopper Rubber	AB
7	CFTAT1031GE02		Disc Cover Ass'y	AY
7-2	HDECP0263GESA		Decoration Plate	AM
7-3	HDECP0262GESA		Disc Window	AD
7-4	HBDGS3017GESA		DVD Badge	AG
7-5	PGiDM0183GEZZ		Ratchet Housing	AE
7-6	LSTPP0012GEZZ		Ratchet Stopper	AE
7-7	MSPRC0227GEZZ		Ratchet SPR	AB
8	MSPRC0245GEZZ		Spring	AC
11	CCABC1003GE01		Cabinet C Ass'y(LCD, Rear) (L70S)	AX
11	CCABC1003GE02		Cabinet C Ass'y(LCD, Rear) (L70BL/W)	AY
11-2	HBDGB3032GESE		SHARP Logo Badge(L70S)	AF
11-2	HBDGB3032GESD		SHARP Logo Badge (L70BL/W)	AF
12	CCABD1002GE01		Cabinet D Ass'y(LCD Panel)	AX
12-2	PCOVP0102GEZZ		Speaker Cover R	AC
12-3	PCOVP0103GEZZ		Speaker Cover L	AC
12-4	PSPAH0102GEZZ		Speaker Spacer R	AD
12-5	PSPAH0103GEZZ		Speaker Spacer L	AD
12-6	LX-HZ3094CEFD		Collar B Tight Screw	AA
12-7	PCOVP0106GEZZ		Speaker Cover M	AE
13	JBTN-2994GESA		LCD Lock Button	AE
14	MHNG-3021GEZZ		Hinge L	AN
16	JBTN-2993GESA		Power SW Knob	AE
17	PCAPH0102GEZZ		LCD Rubber Cap	AB
20	XiPSF20P04000		Screw(M2 X 4)	AA
21	XiPSN20P08000		Screw(M2 X 6)(L70S)	AA
21	XiPSF20P08000		Screw(M2 X 6)(L70BL/W)	AA
22	XiPSN20P06000		Screw(M2 X 8)(L70S)	AA
22	XiPSF20P06000		Screw(M2 X 6)(L70BL/W)	AA
23	LX-HZ0018TAFN		P Tight Screw(M2 X 6) (L70S)	AA
23	LX-HZ0018TAFF		P Tight Screw(M2 X 6) (L70BL/W)	AA
24	LX-HZ0030TAFF		B Tight Screw(M2 X 4)	AA
25	RDENC0579GEZZ		Power Unit	BD
26	DUNTK5869XJ6A		Main PWB Unit	—
27	DUNTK5870XJ6A		LCD PWB Unit	—
28	RiNV-0003GEZZ		Inverter Unit	BB
29	DUNTK5755XJ6D		Operate PWB Unit	—
30	QCNW-8100GEZZ		Power FFC	AE
31	QCNW-8099GEZZ		Operation FFC	AF
33	CCNW-8096GE01		LCD-MAIN Harness	AQ
33-1	QCNW-8096GEZZ		Connecting Cord	AK
33-2	QCNW-8098GEZZ		Connecting Cord	AK
33-3	MHNG-1071GEZZ		Hinge R	AG
34	QCNW-8161GEZZ		Harness for LCD Frame Earth	AC
35	QCNW-8097GEZZ		Spindle Motor FFC	AE
36	QCNW-8117GEZZ		Inverter FFC	AF
37	RSP-Z0005GEZZ		Speaker	AP
38	RLCDT0001GEZZ		LCD Panel	CS
39	XWHJZ21-02040		Washer	AA
40	XWHSD32-05080		Speaker Washer	AA
41	QCNW-8162GEZZ		Harness for LCD PWB Earth	AC

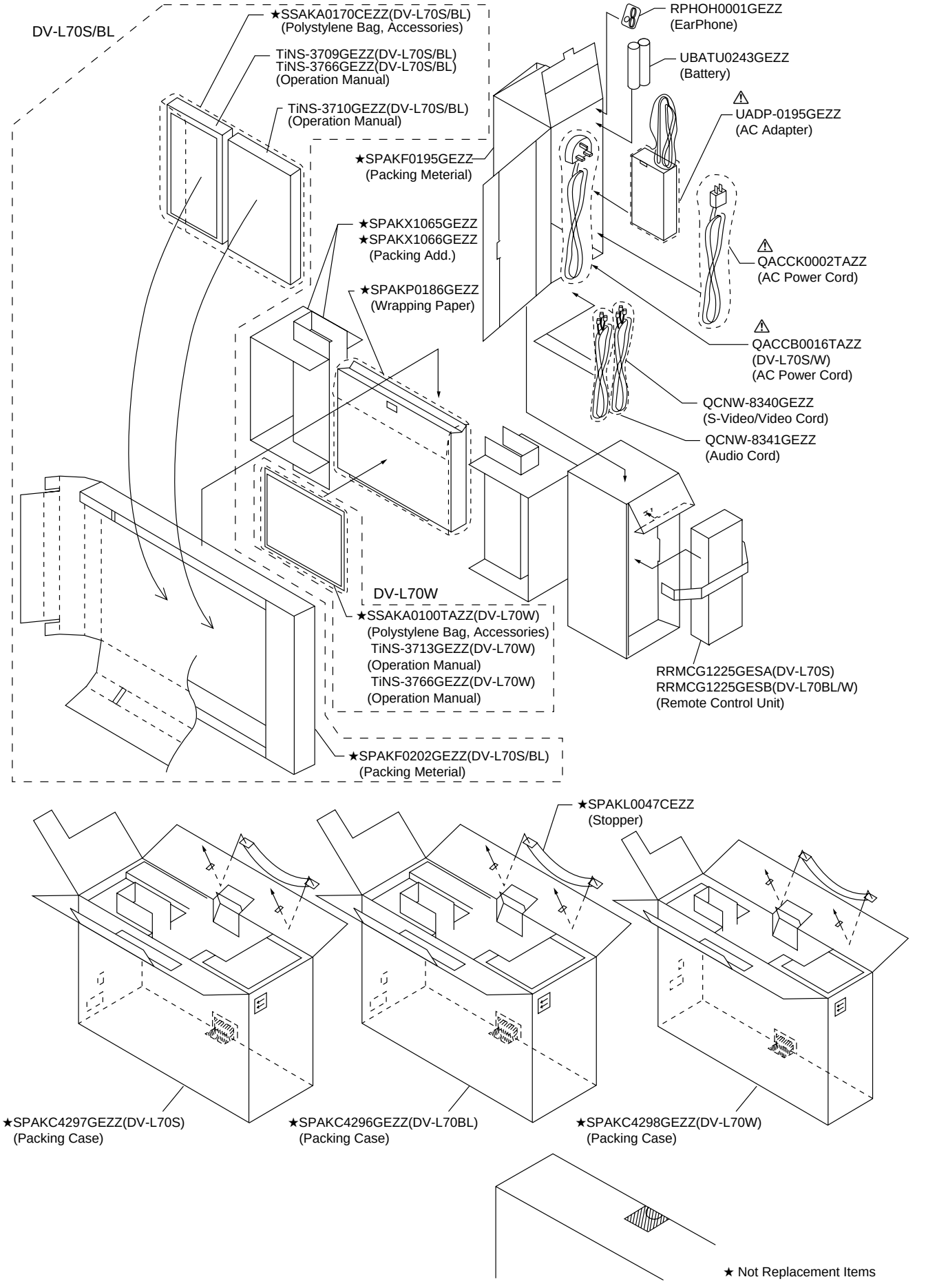
MECHANISM EXPLODED VIEW



CABINET EXPLODED VIEW



16. PACKING OF THE SET



- M E M O -

- M E M O -

SHARP

COPYRIGHT © 1999 BY SHARP CORPORATION

ALL RIGHTS RESERVED.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in
any form or by any means, electronic, mechanical,
photocopying, recording, or otherwise, without
prior written permission of the publisher.

TQ0791-S
Dec. 1999 Printed in JAPAN
SA. NS

SHARP CORPORATION
AV Systems Group
Quality & Reliability Control Center
Yaita, Tochigi 329-2193, Japan